

NISTIR 8280

**Ongoing Face Recognition
Vendor Test (FRVT)
Part 3: Demographic Effects**

**Annex 15 : Genuine and impostor score distributions for
United States mugshots**

This document is an annex of NIST Interagency Report 8280:
<https://doi.org/10.6028/NIST.IR.8280>

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1 Overview

While Annex [Annex 12](#) shows error tradeoff distributions, this annex shows the underlying score distributions. This is included because while recognition *errors* drive costs operationally, the presence of wholesale shifts between distributions from two demographics reveals a broader effect i.e. one that is not just confined to the high tail of the impostor distribution or the low tail of the genuine distribution. Each page contains two figures corresponding to one algorithm, the first shows genuine scores, the second impostor scores. Each figure is a plot of FNMR against FMR for six demographic groups: male and female, and races labelled A, B, I, W.

2 Data

The mugshot dataset is described in Annex [Annex 1](#).

For the generation of the Figures in this annex, each algorithm executed the number of comparisons tabulated below using a total of 8 201 678 images. Note that we did not execute a full cross-comparison. In particular we only compared subjects of the same sex and same race. We disregard age in forming the comparison sets because the dataset under-represents the older demographic. The following table shows the counts of scores by demographic.

Race Label	Sex Label	Mated Comparison Count	Impostor Comparison Count	
1	A	F	10 995	3 000 000
2	A	M	139 342	3 000 001
3	B	F	263 910	3 000 007
4	B	M	1 954 864	3 000 009
7	W	F	362 816	3 000 012
8	W	M	1 033 237	3 000 017
9	Total		4061227	108000690

3 Fixed Threshold

The threshold used in these figures is set to be the lowest value that gives a false match rate no higher than 0.0001 over the 108 million impostor comparisons conducted. This will very closely the 10800-th highest impostor score. A false match is declared if the impostor score is equal to, or exceeds, a threshold. A false non-match is declared if the genuine score is below threshold.

4 Plot

The plots show score distributions in two ways. First as boxplots which show the median and the (25,75)-th percentiles, and second as violin plots which depict the distribution. These are useful in cases where the data is bimodally distributed. Eight distributions appear in each panel, one for each of two sexes and four races. The horizontal line in each panel shows the globally-fixed threshold, text for which appears at top right. The blue text gives FNMR in the upper panel, and \log_{10} FMR in the lower panel.

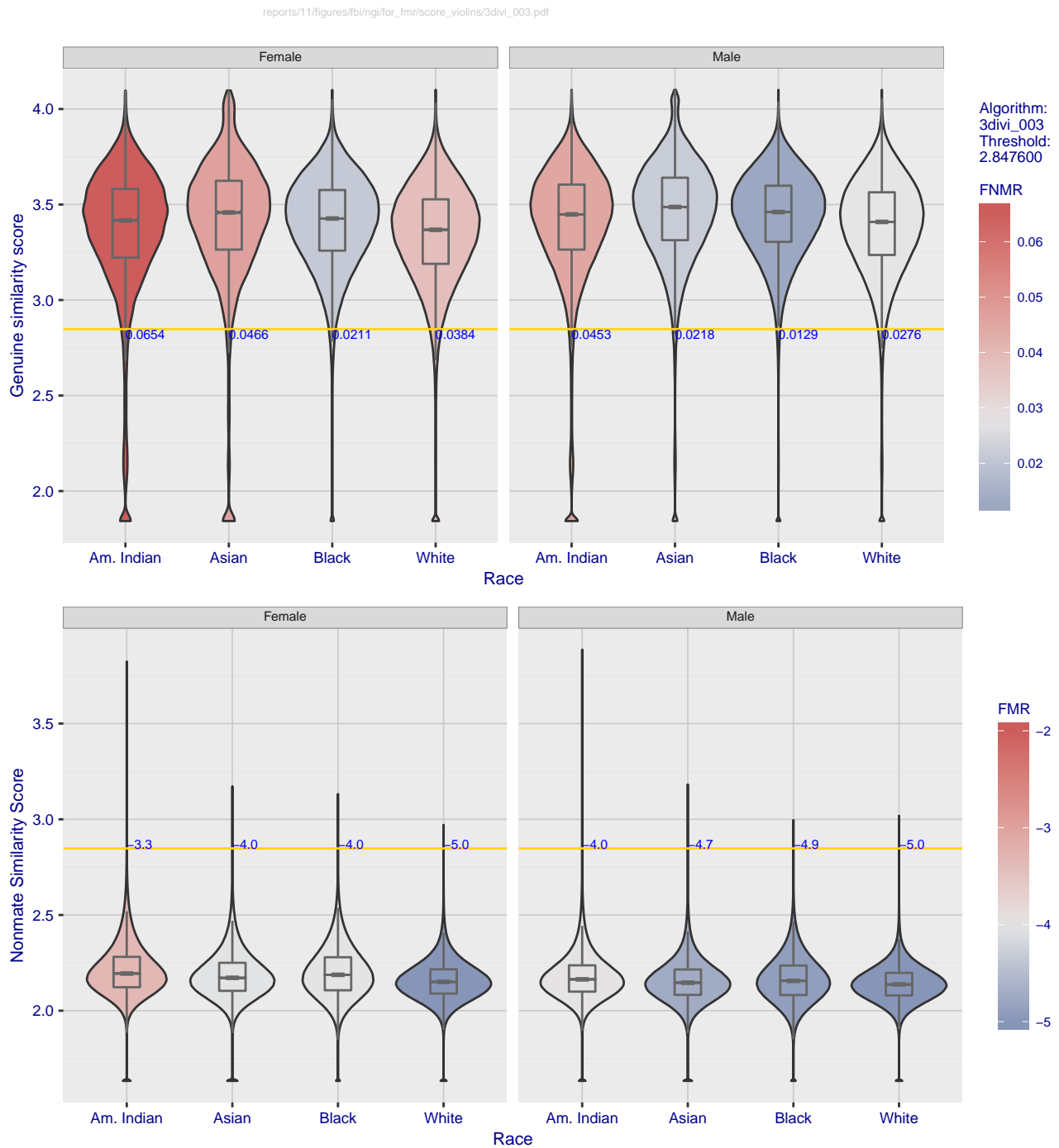


Figure 1: FNMR and FMR score distributions by sex and race, 3divi-003. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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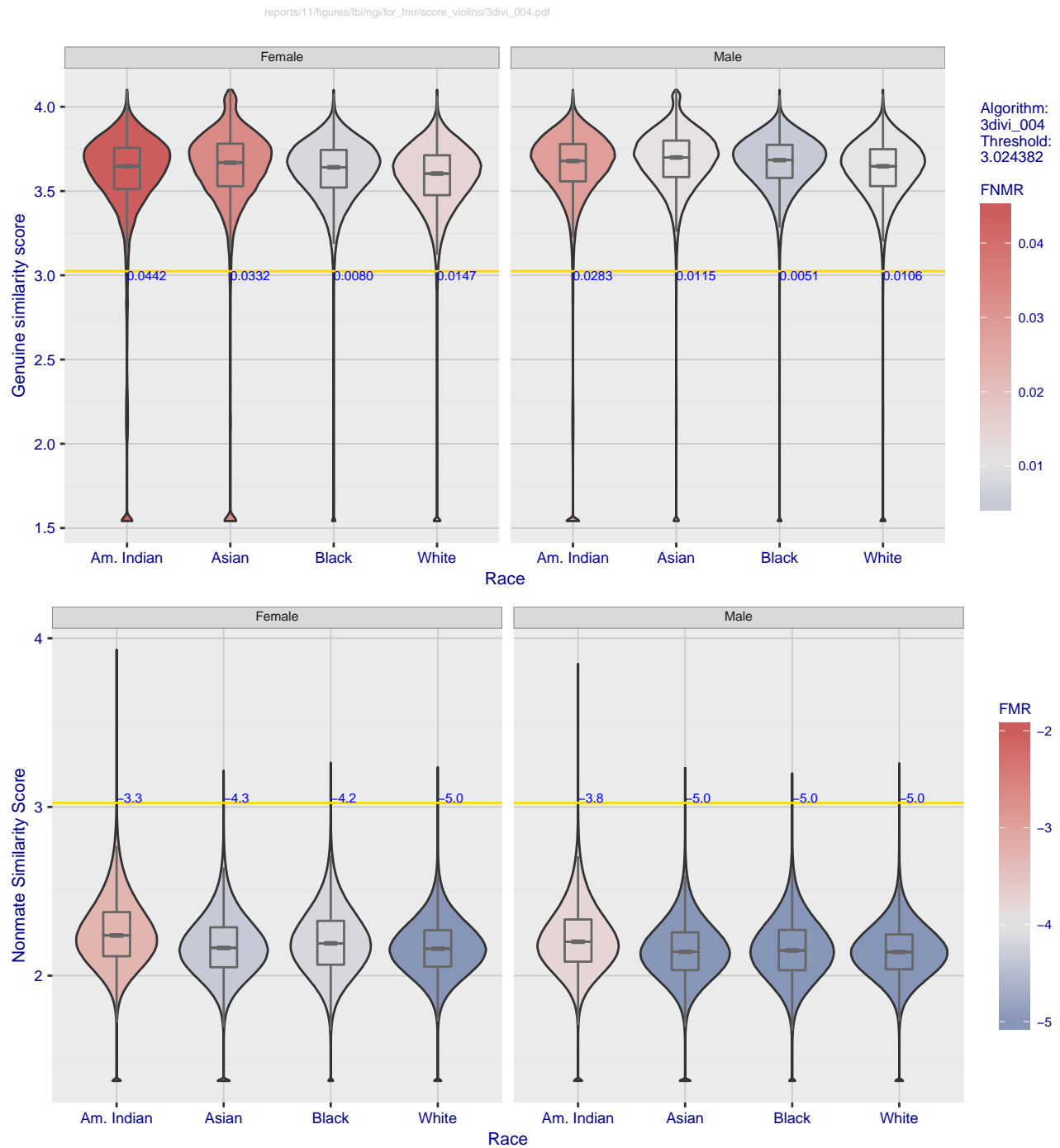


Figure 2: FNMR and FMR score distributions by sex and race, 3divi-004. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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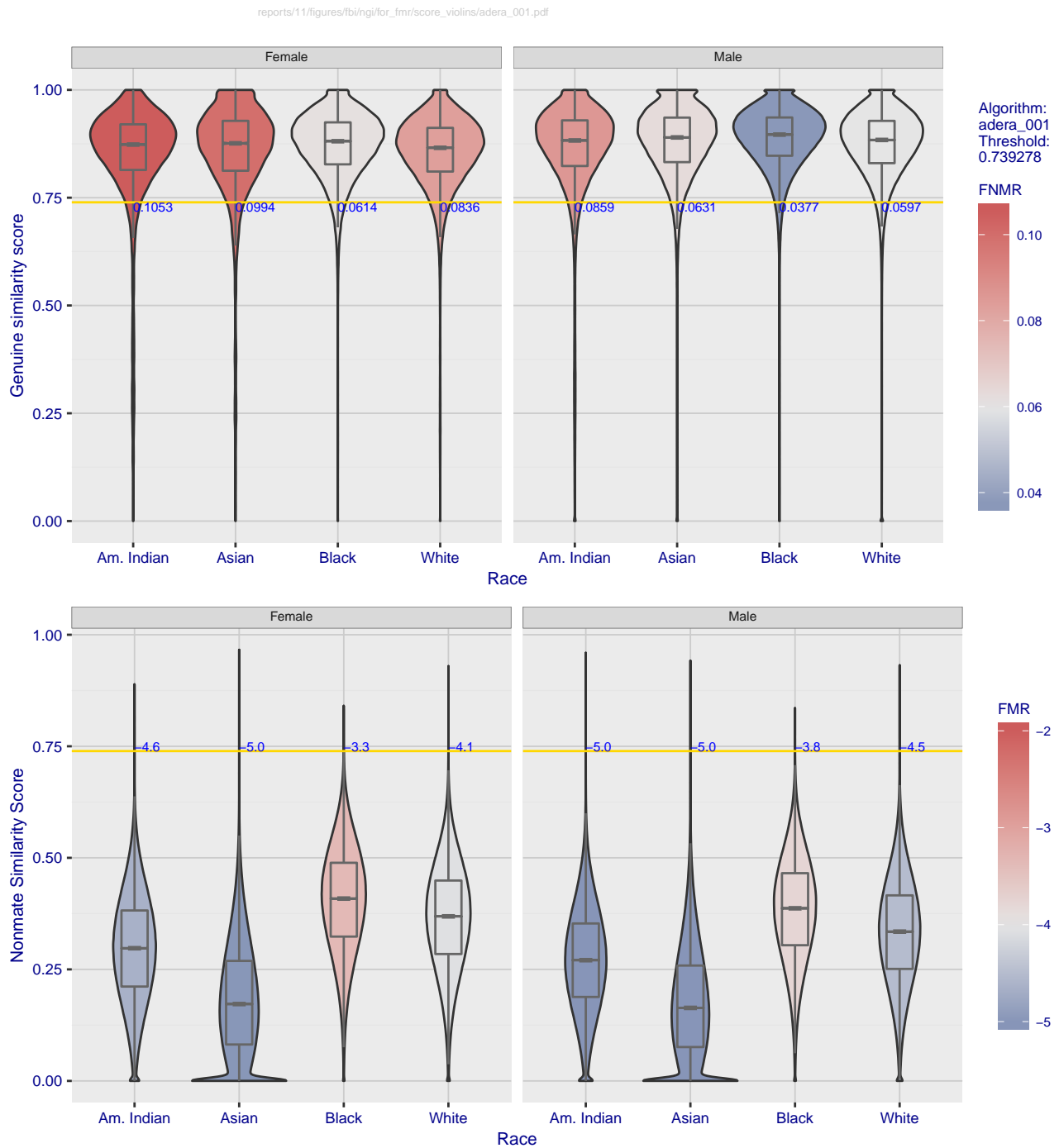


Figure 3: FNMR and FMR score distributions by sex and race, adera-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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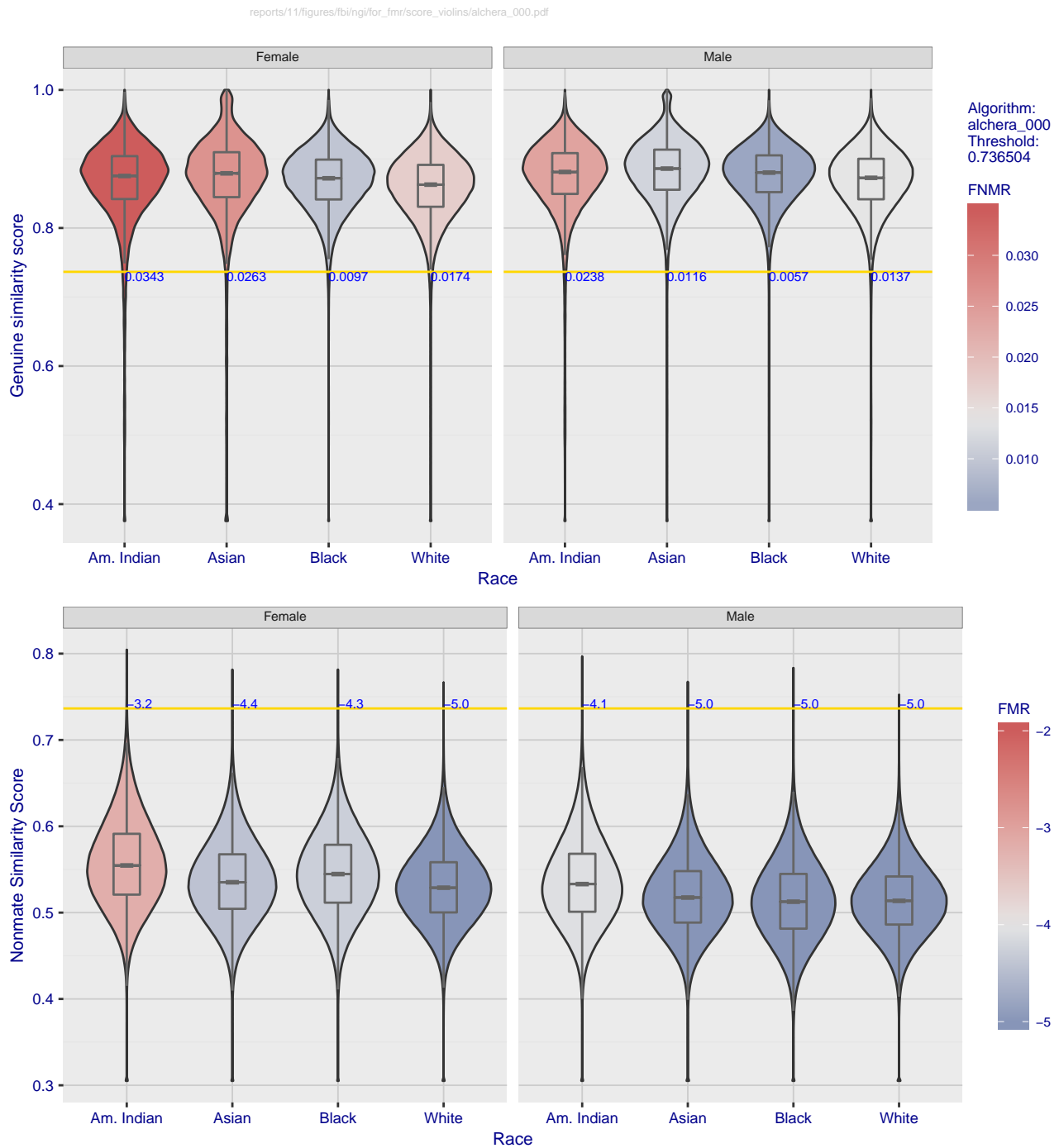


Figure 4: FNMR and FMR score distributions by sex and race, alchera-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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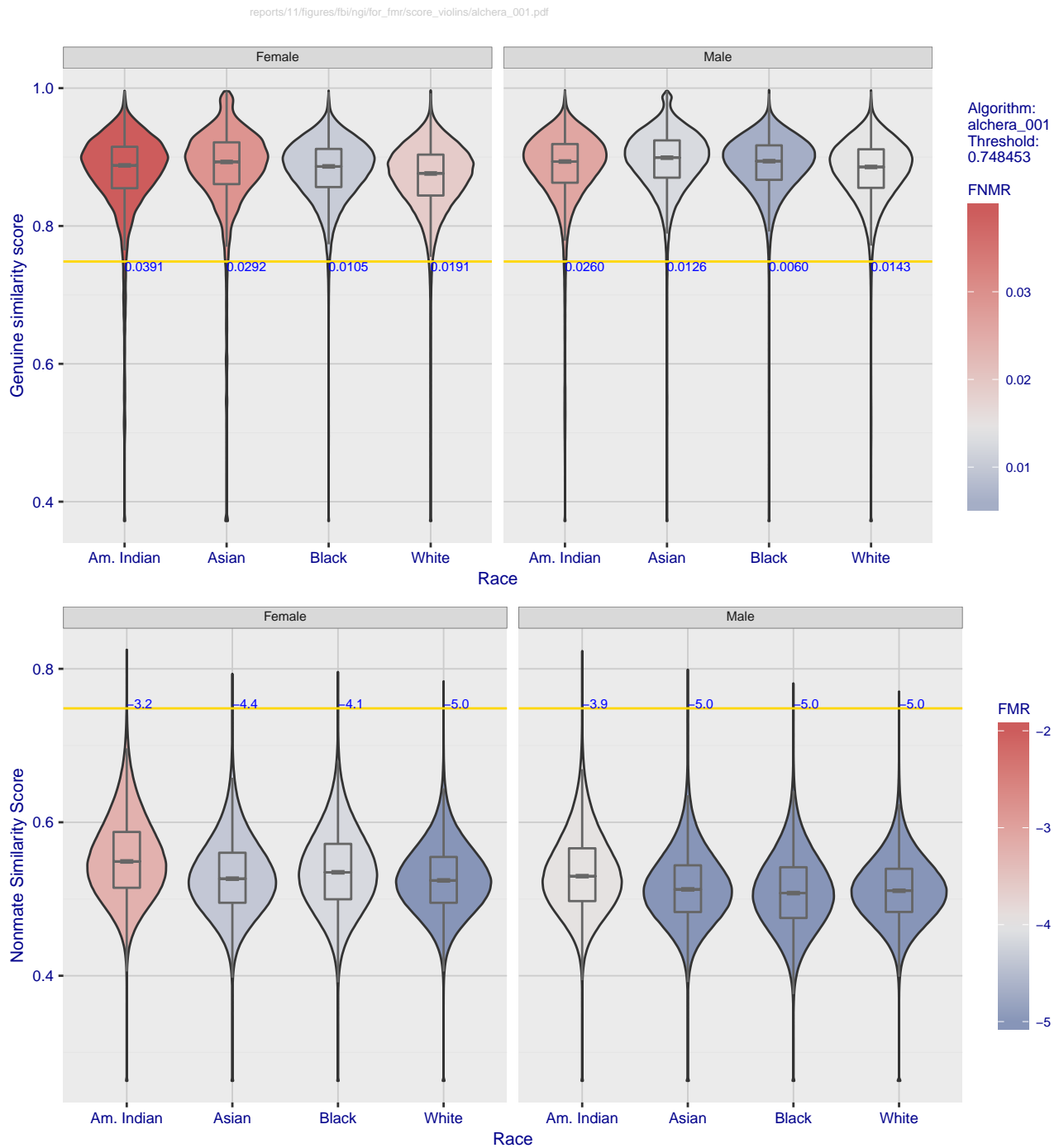


Figure 5: FNMR and FMR score distributions by sex and race, alchera-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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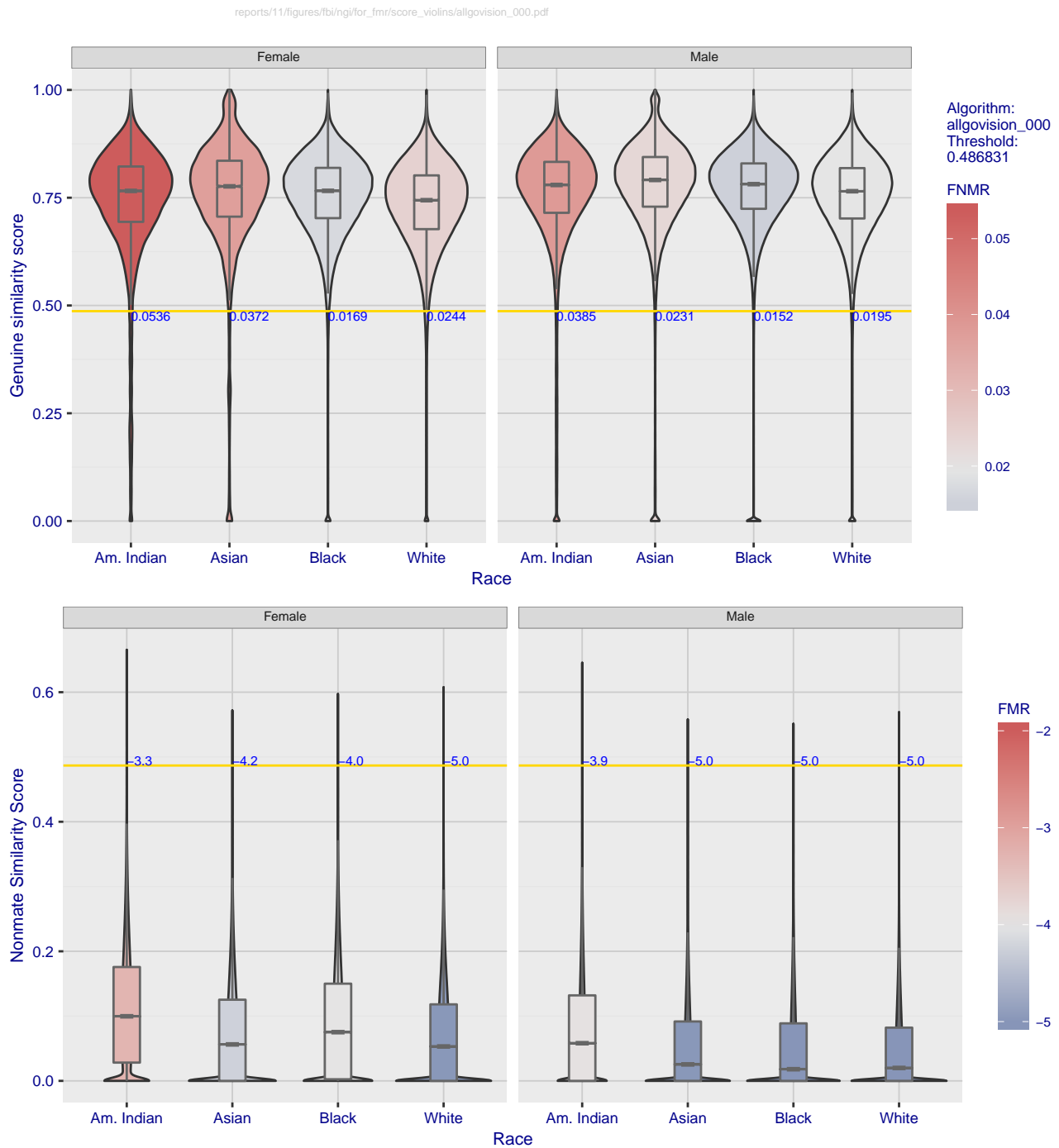


Figure 6: FNMR and FMR score distributions by sex and race, allgovision-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

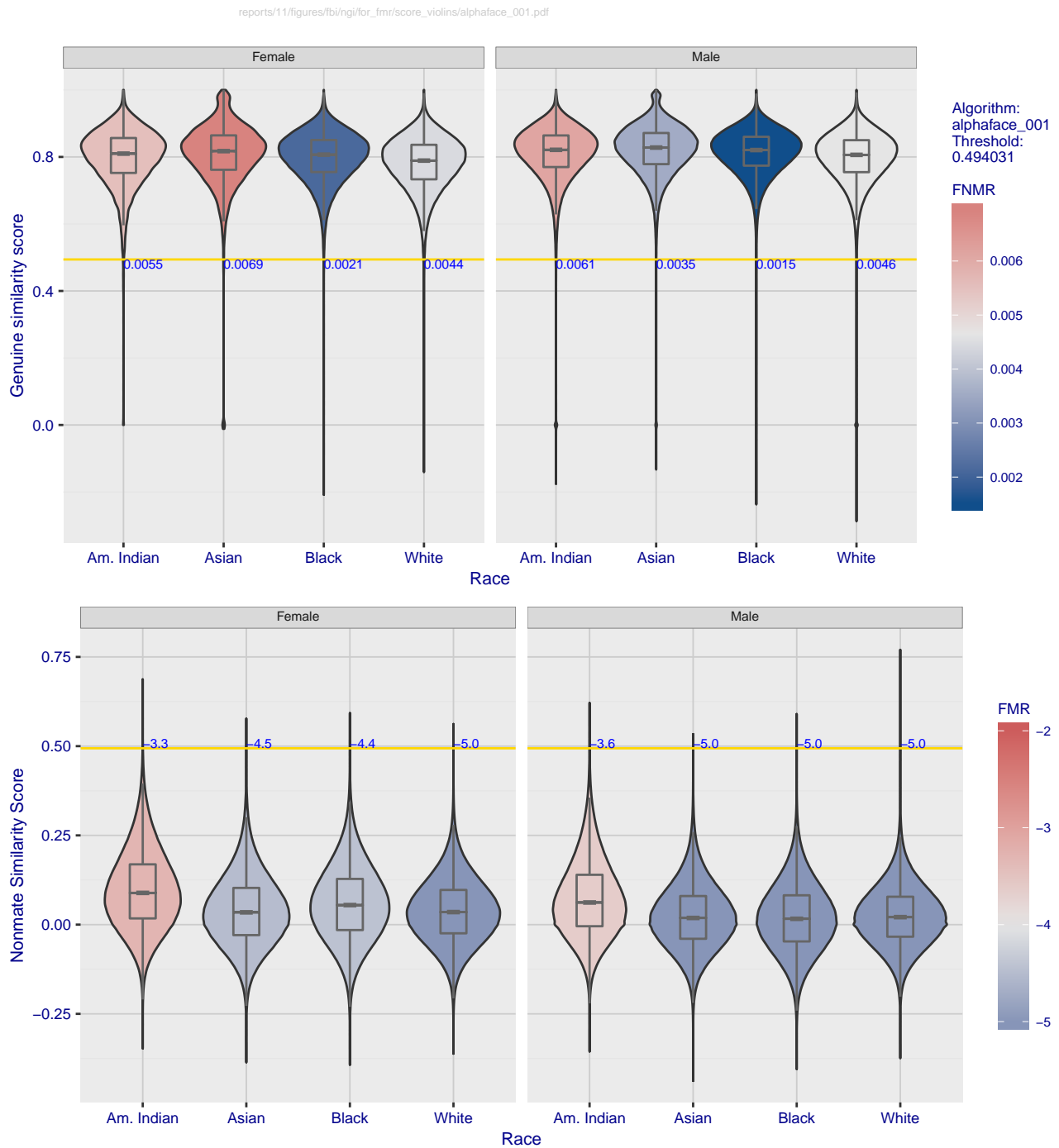


Figure 7: FNMR and FMR score distributions by sex and race, alphaface-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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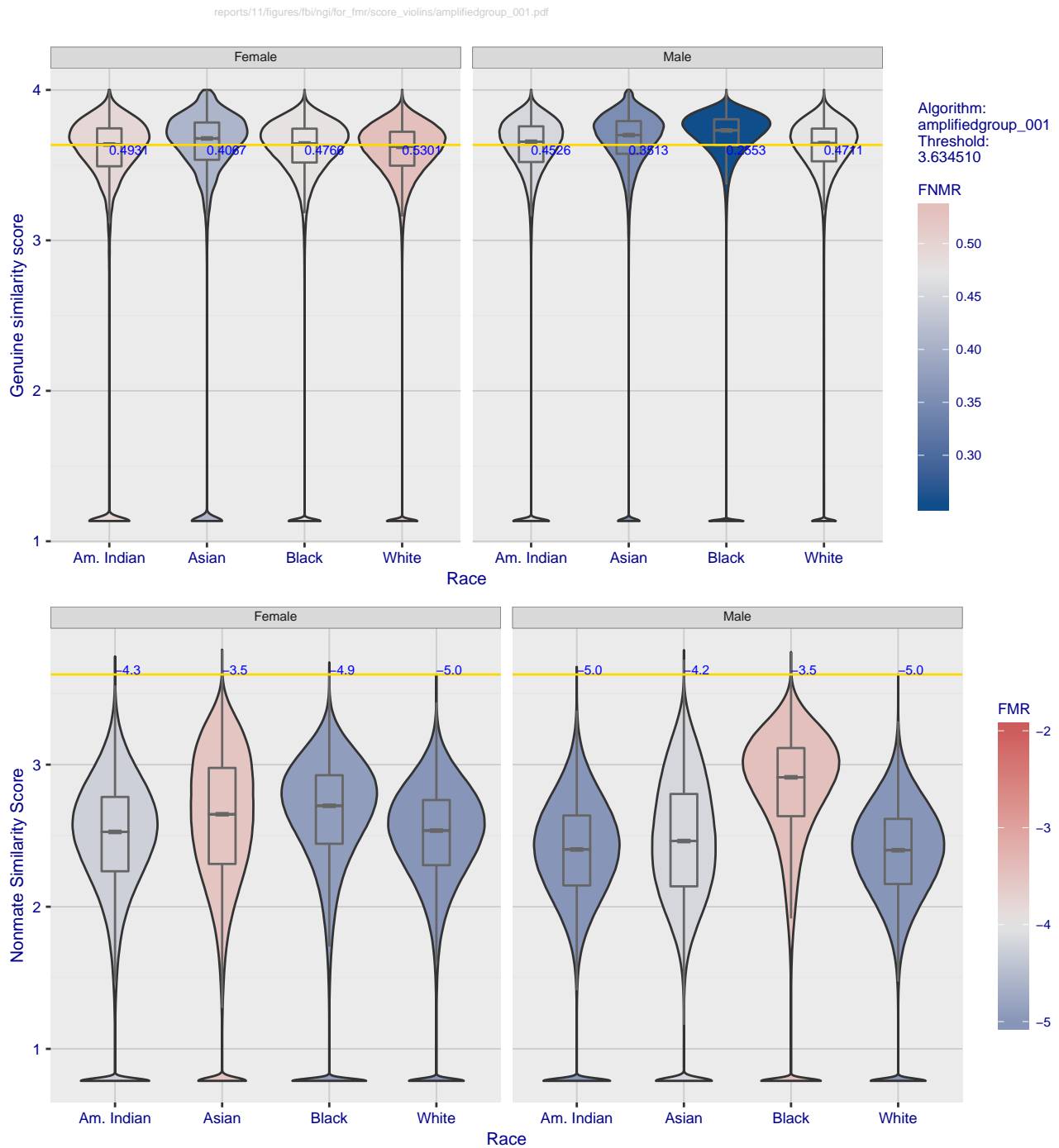


Figure 8: FNMR and FMR score distributions by sex and race, amplifiedgroup-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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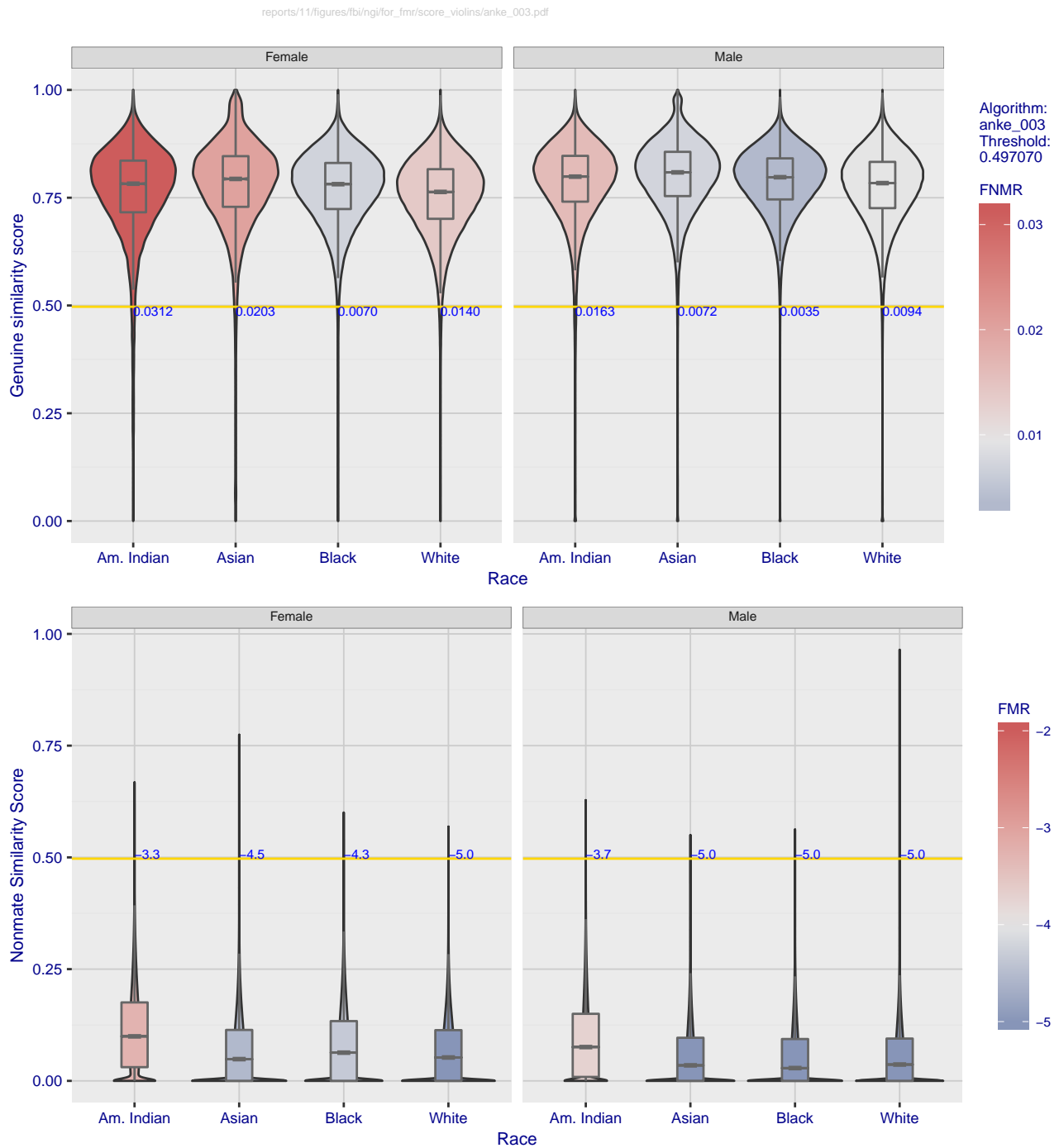


Figure 9: FNMR and FMR score distributions by sex and race, anke-003. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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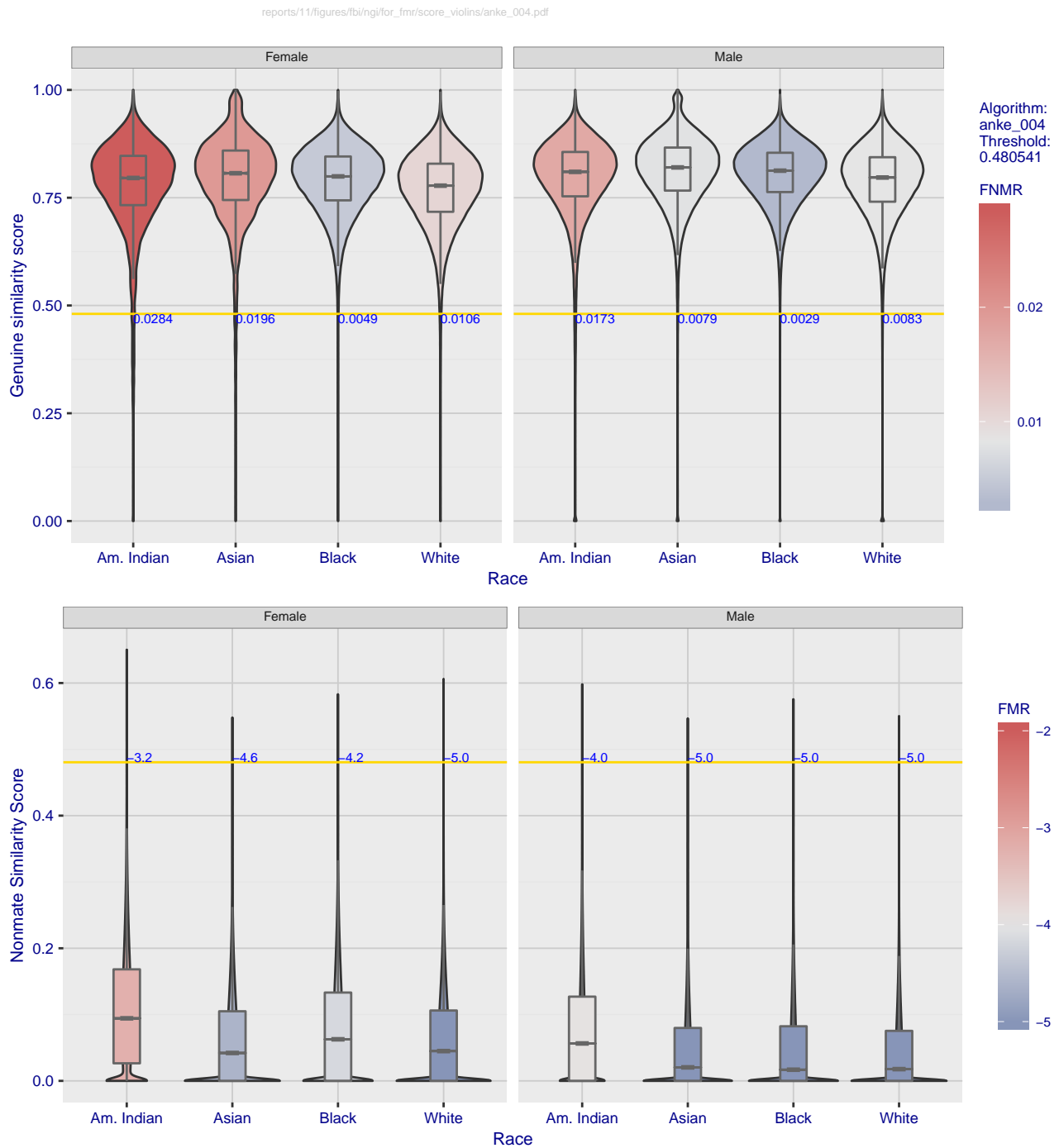


Figure 10: FNMR and FMR score distributions by sex and race, anke-004. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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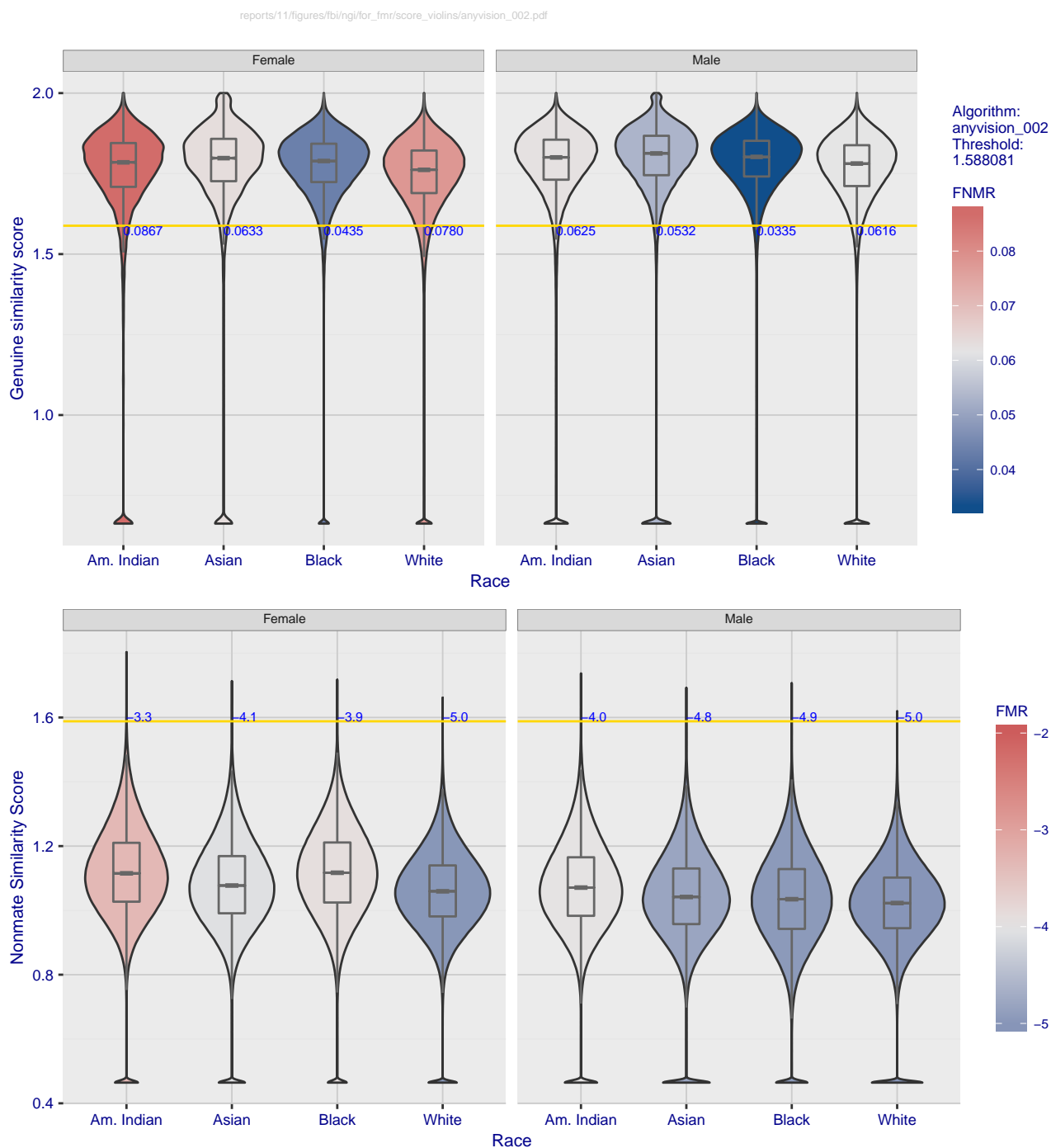


Figure 11: FNMR and FMR score distributions by sex and race, anyvision-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

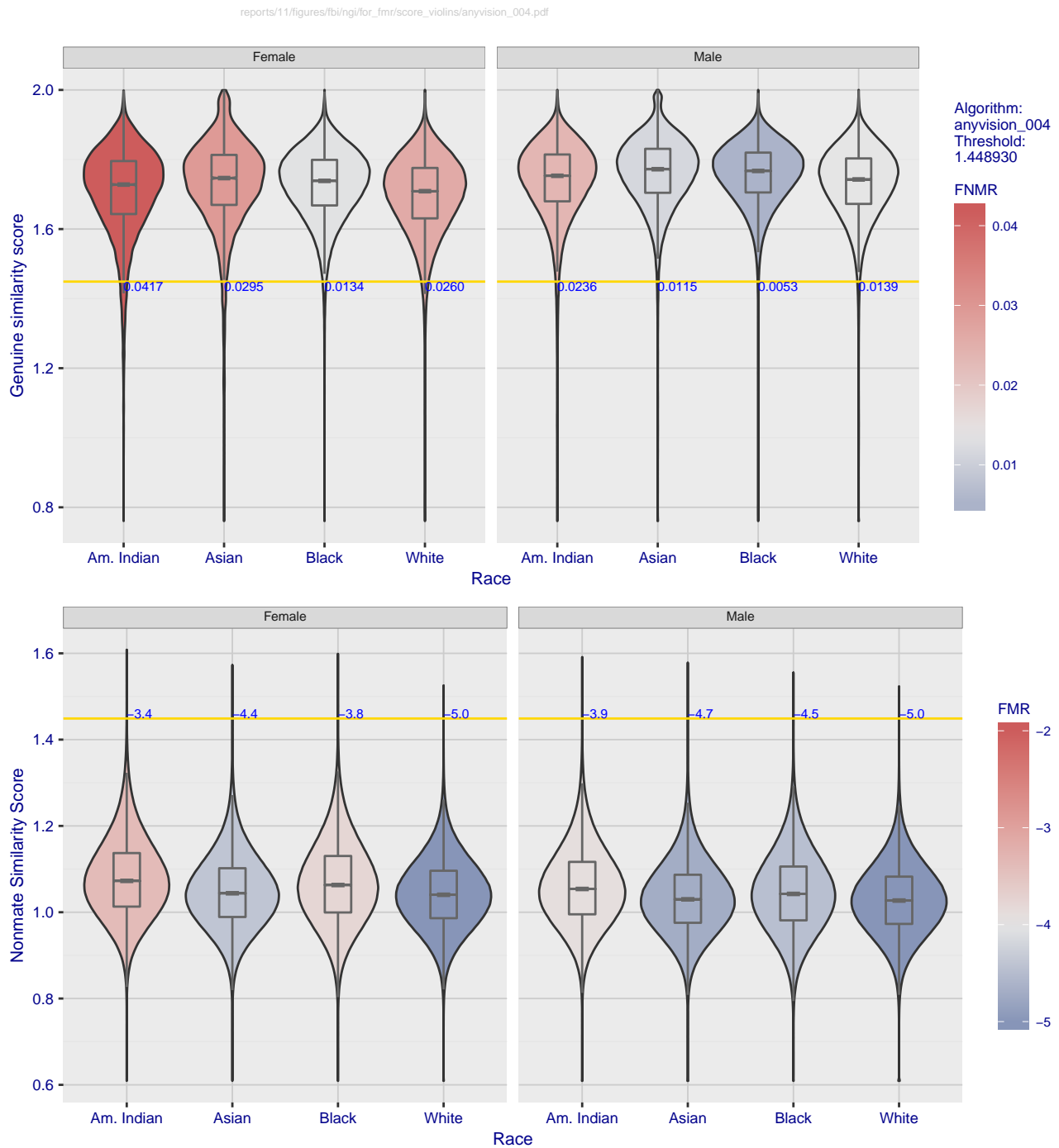


Figure 12: FNMR and FMR score distributions by sex and race, anyvision-004. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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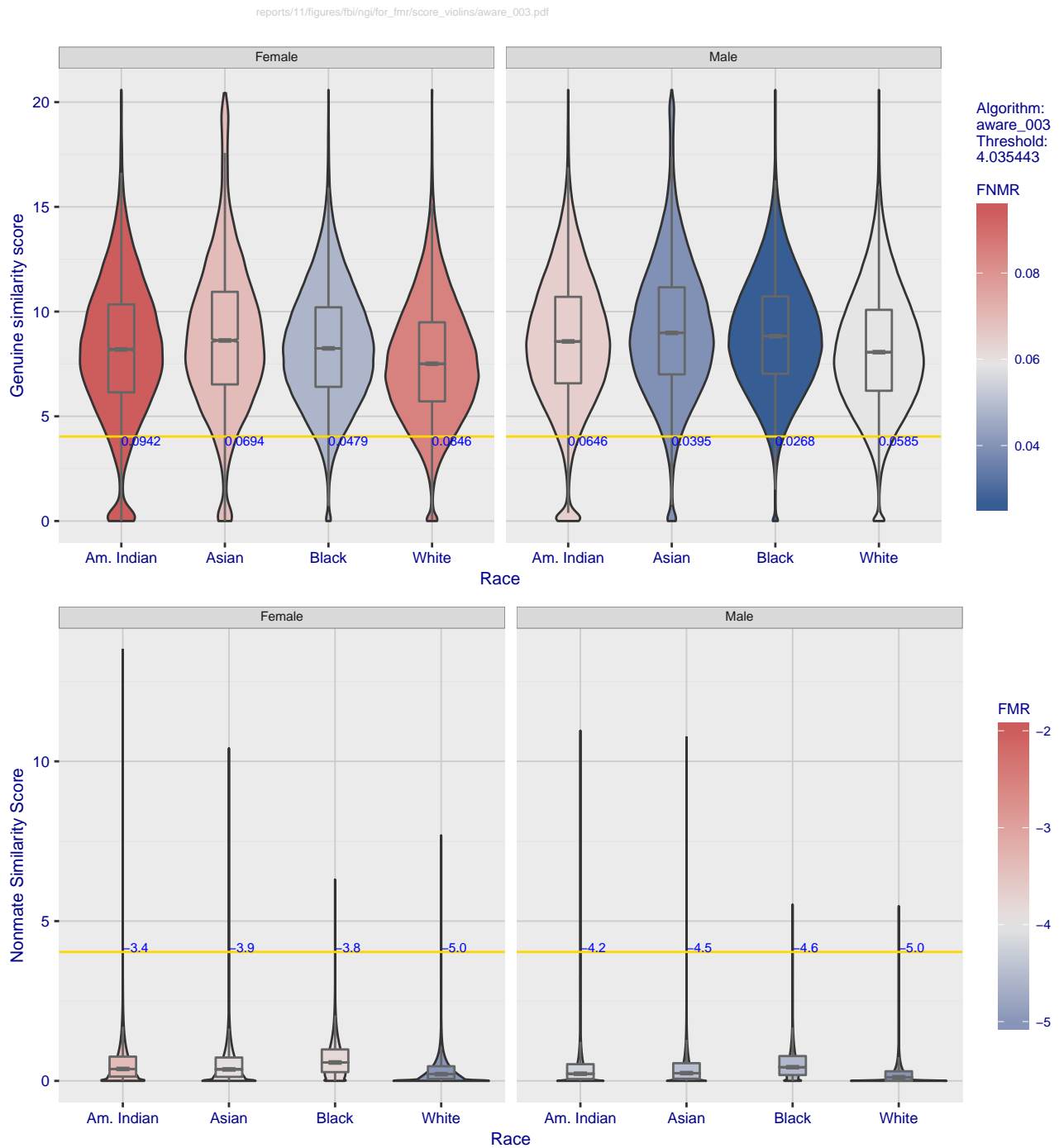


Figure 13: FNMR and FMR score distributions by sex and race, aware-003. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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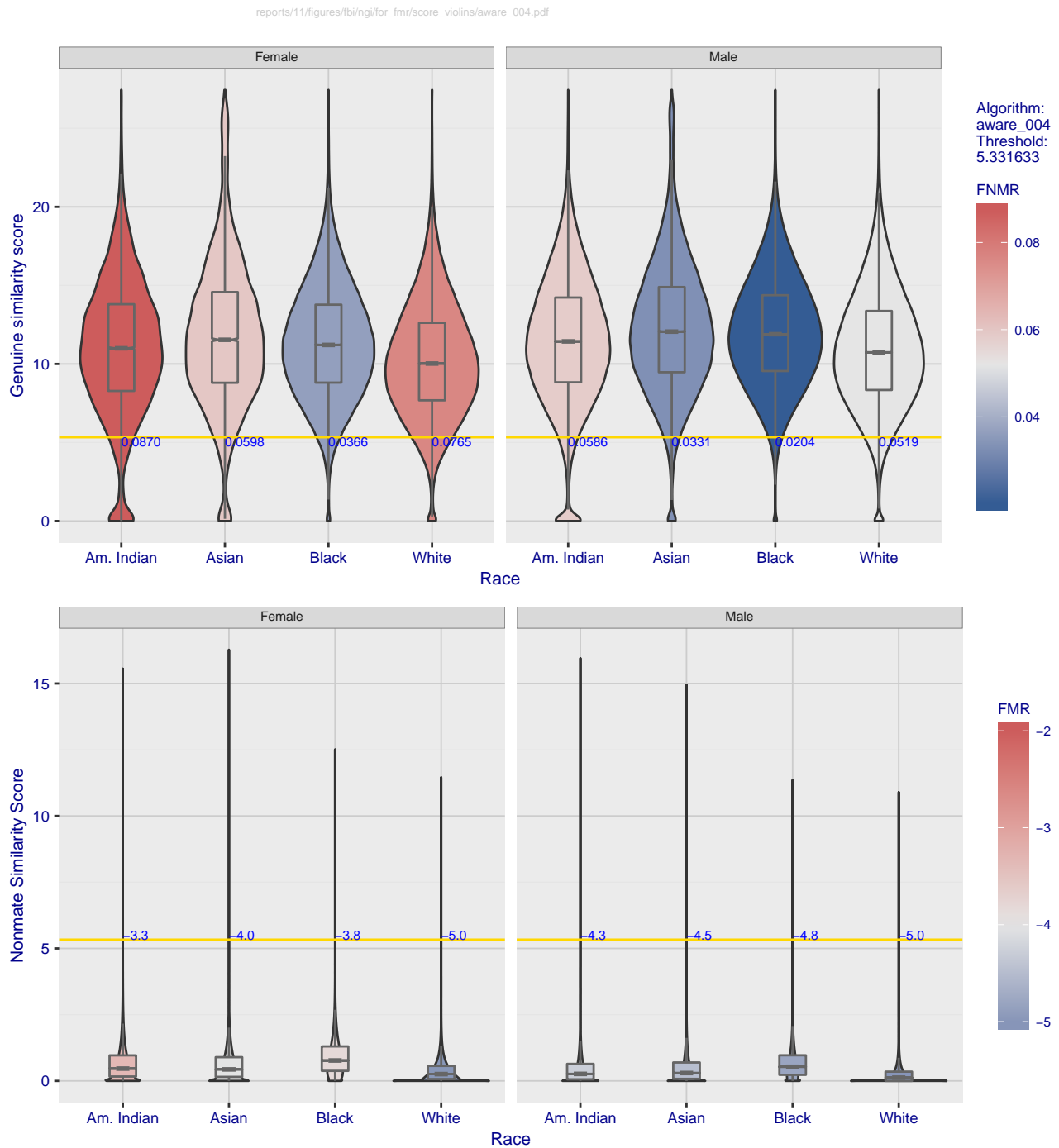


Figure 14: FNMR and FMR score distributions by sex and race, aware-004. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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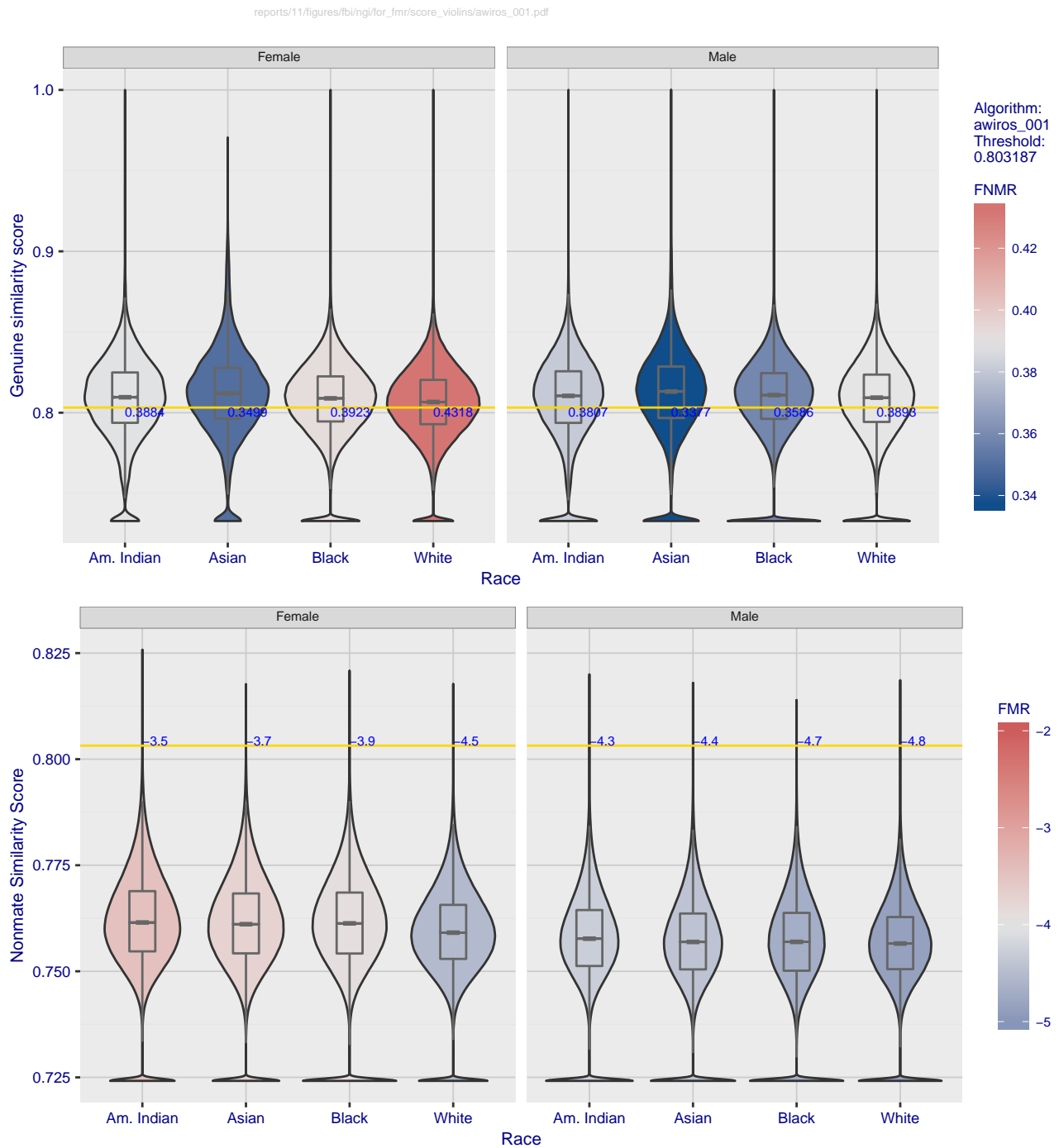


Figure 15: FNMR and FMR score distributions by sex and race, awiros-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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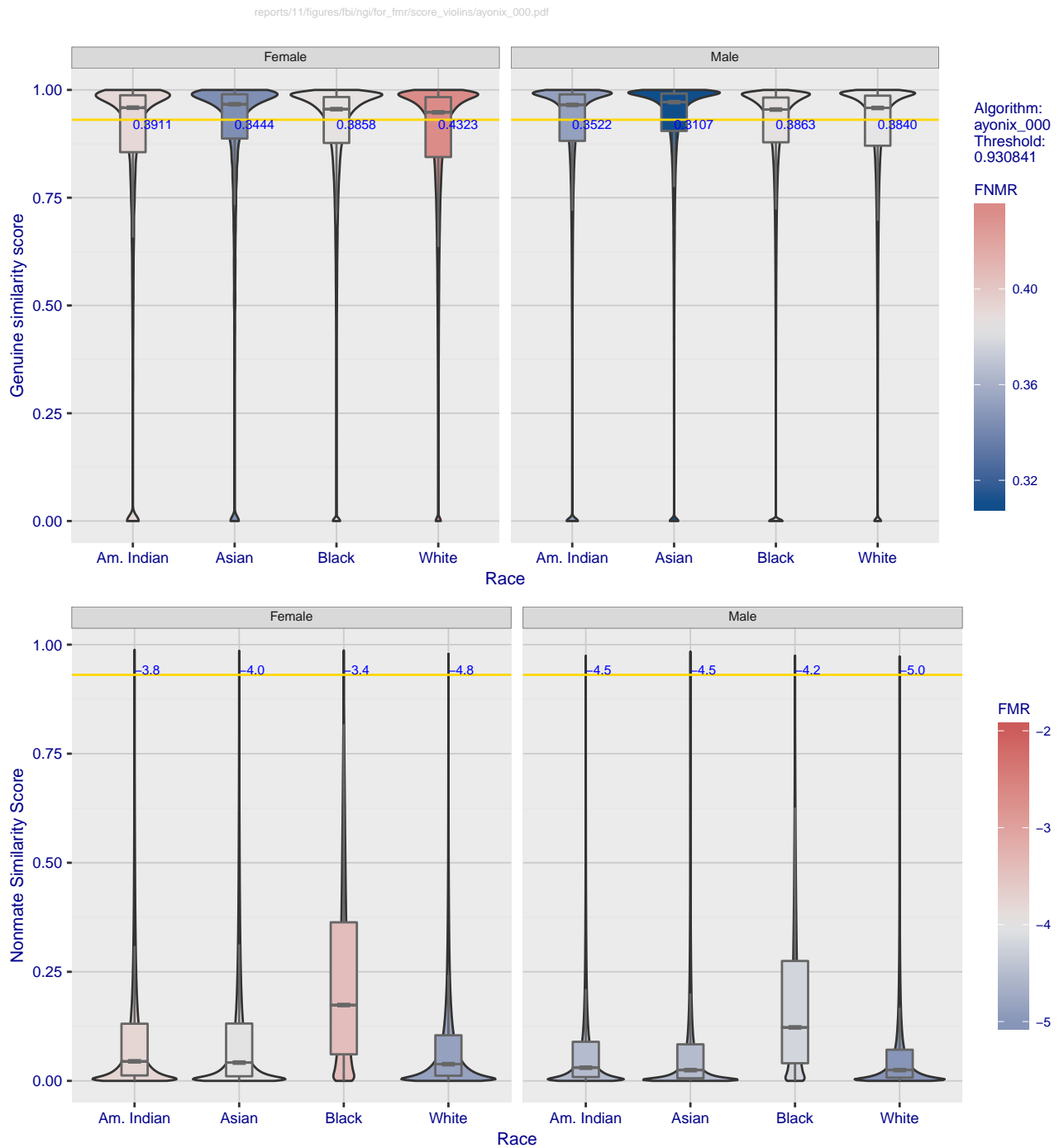


Figure 16: FNMR and FMR score distributions by sex and race, ayonix-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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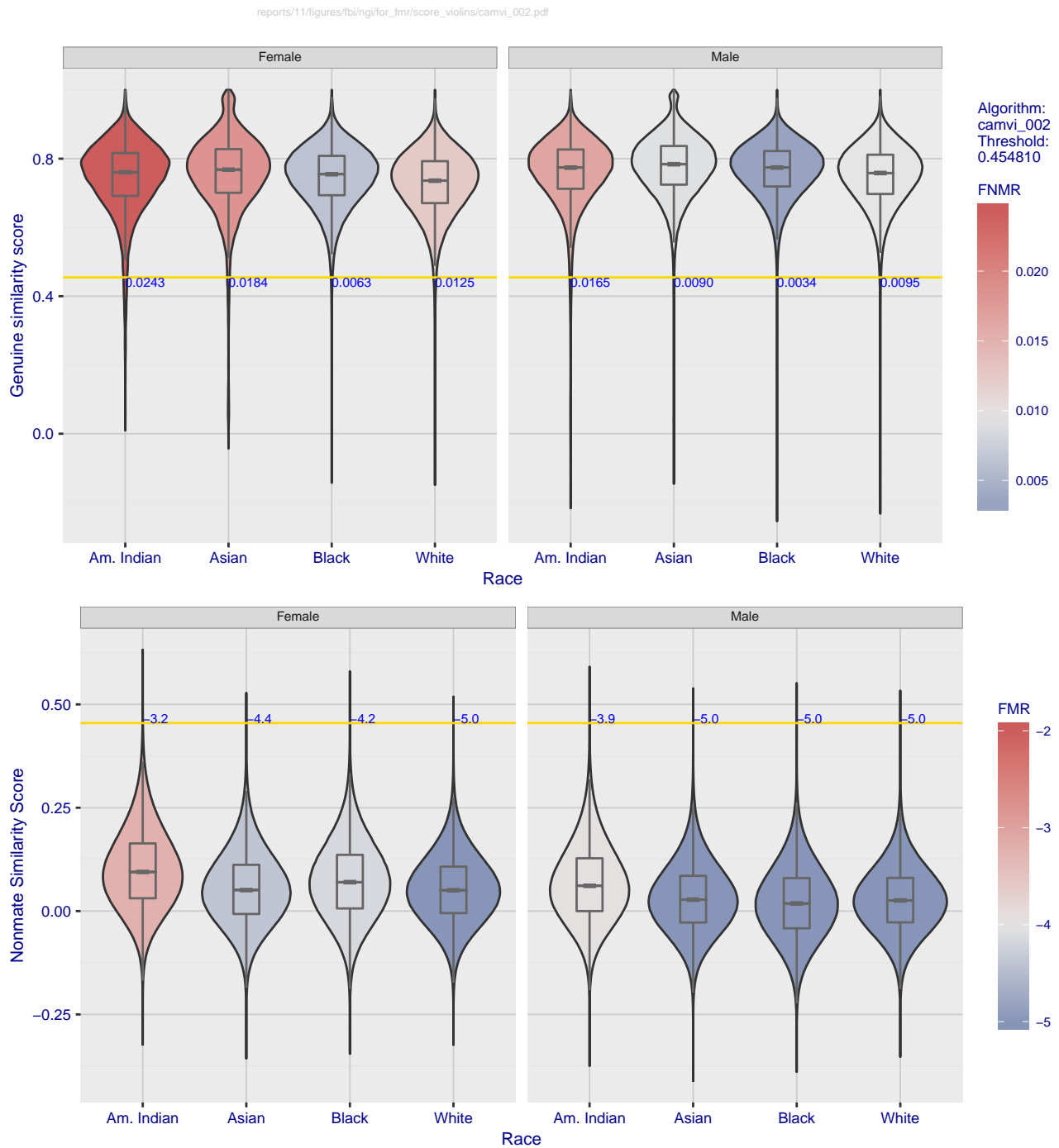


Figure 17: FNMR and FMR score distributions by sex and race, camvi-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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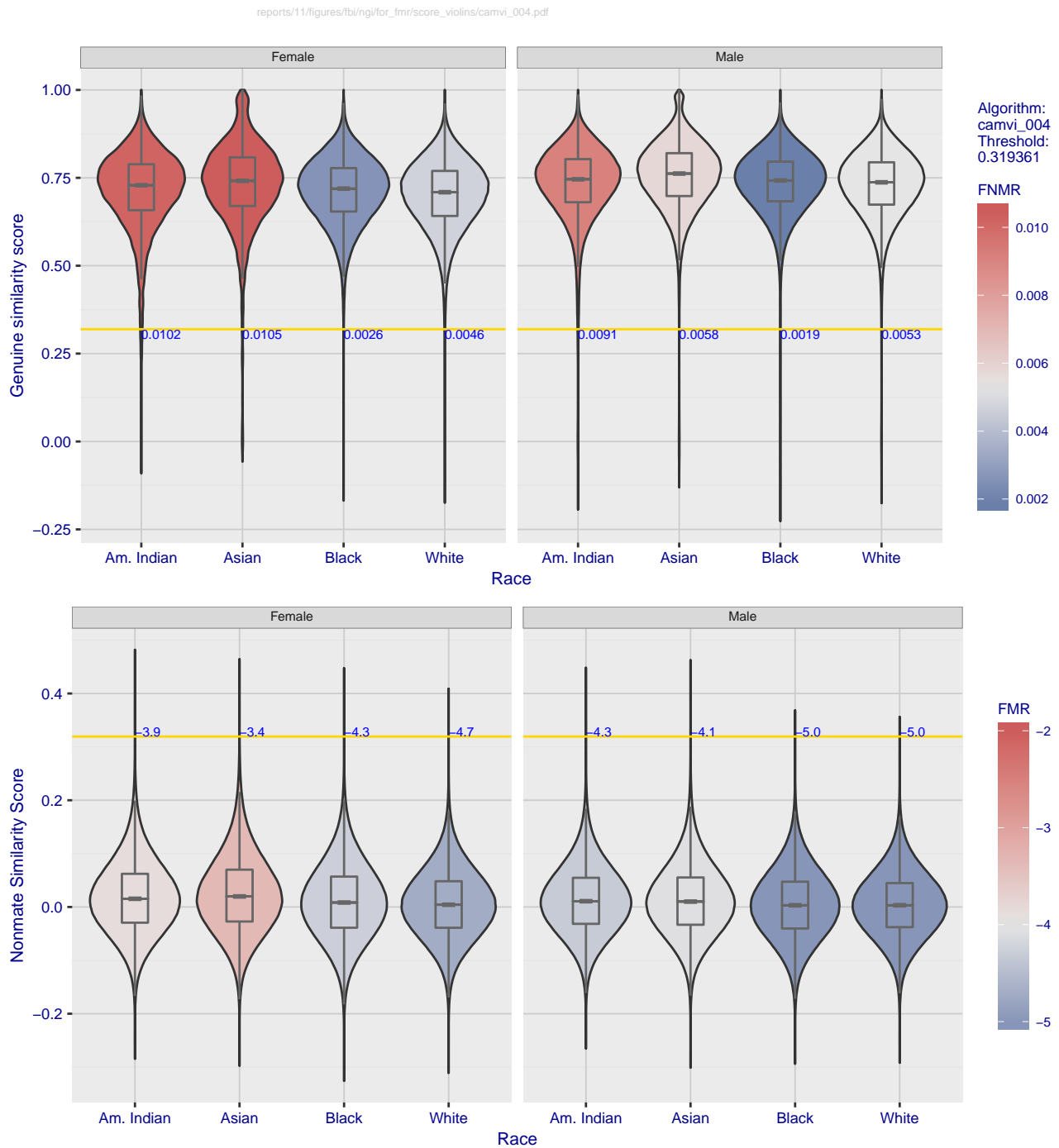


Figure 18: FNMR and FMR score distributions by sex and race, camvi-004. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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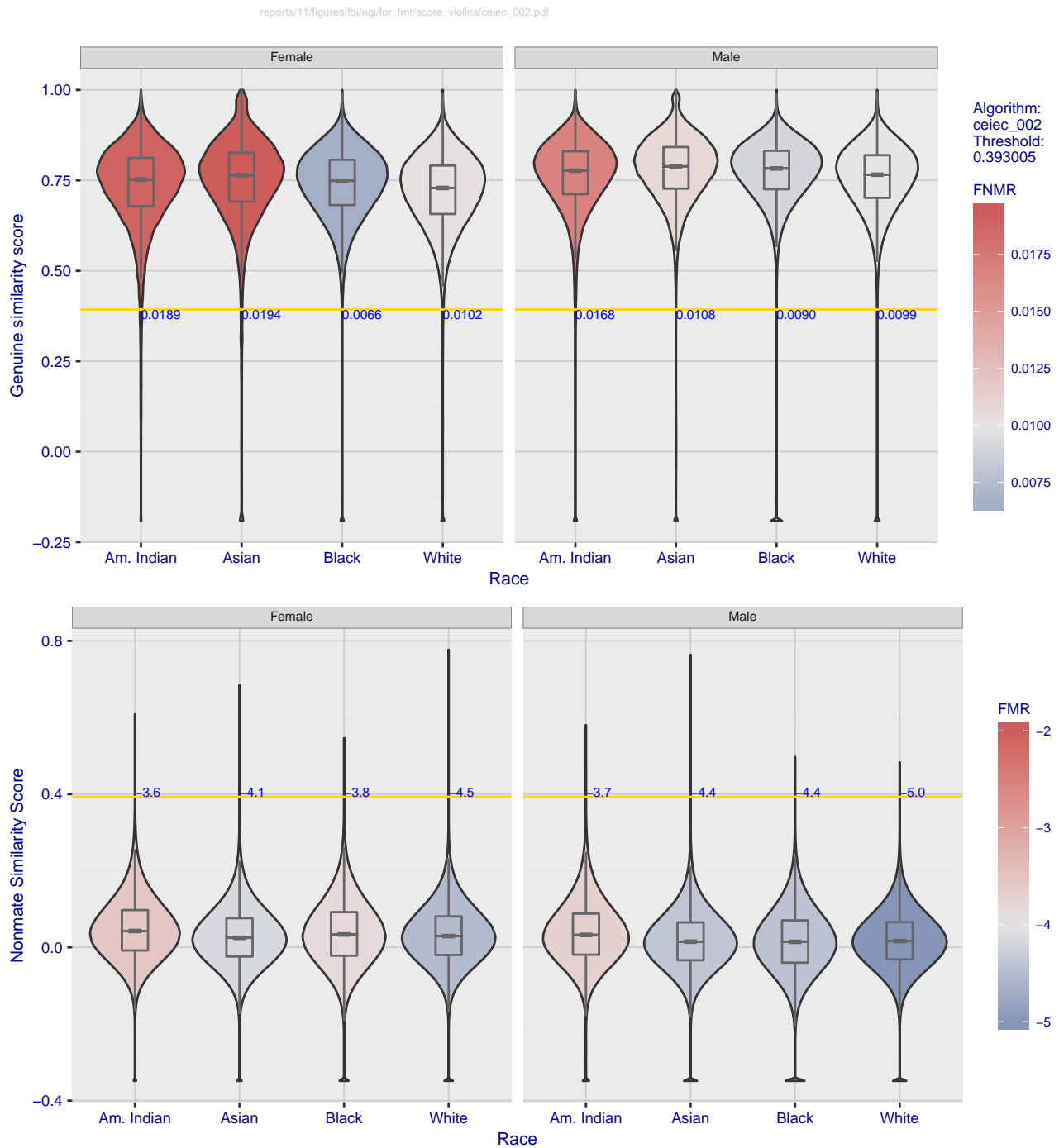


Figure 19: FNMR and FMR score distributions by sex and race, ceiec-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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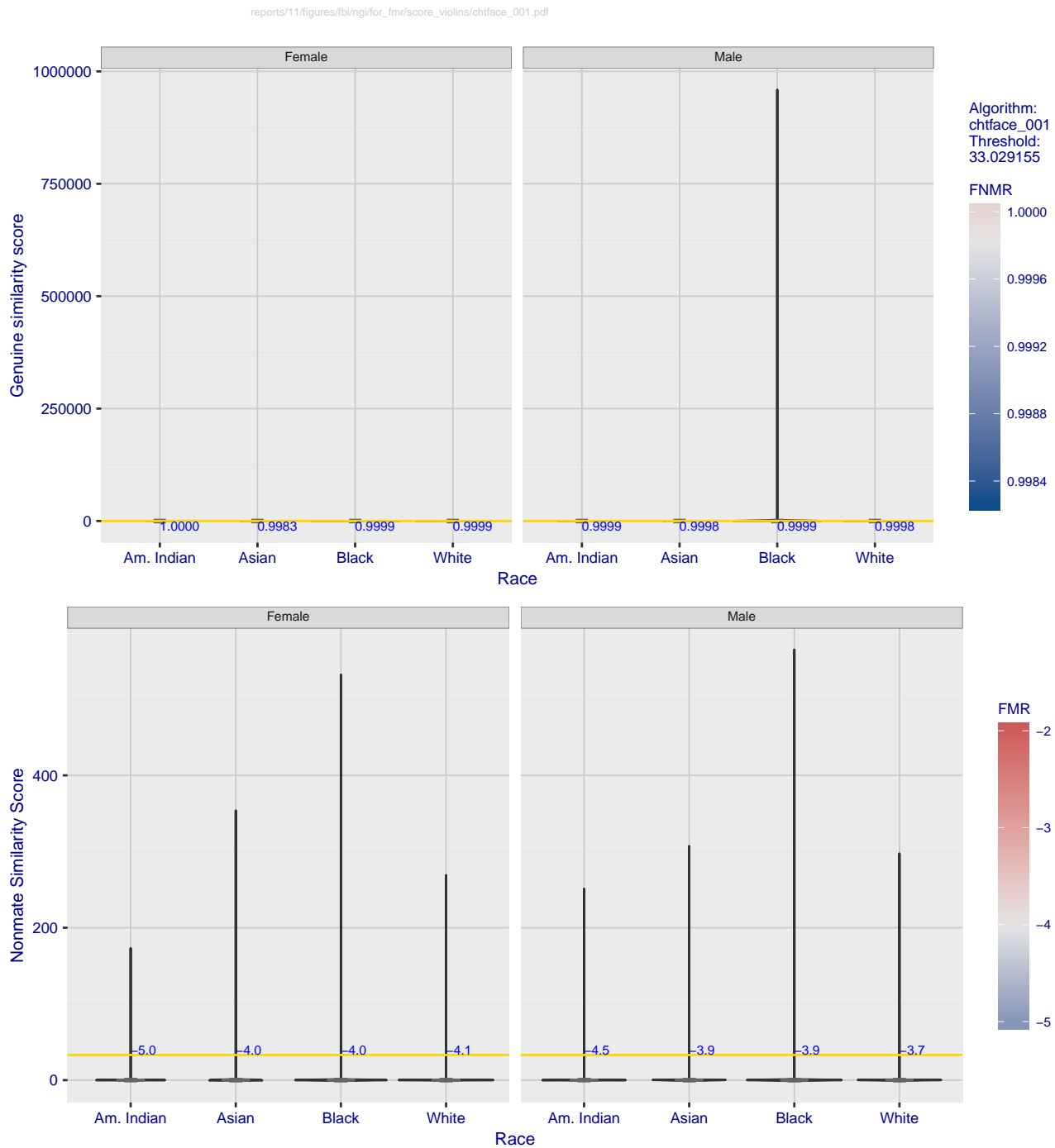


Figure 20: FNMR and FMR score distributions by sex and race, chtface-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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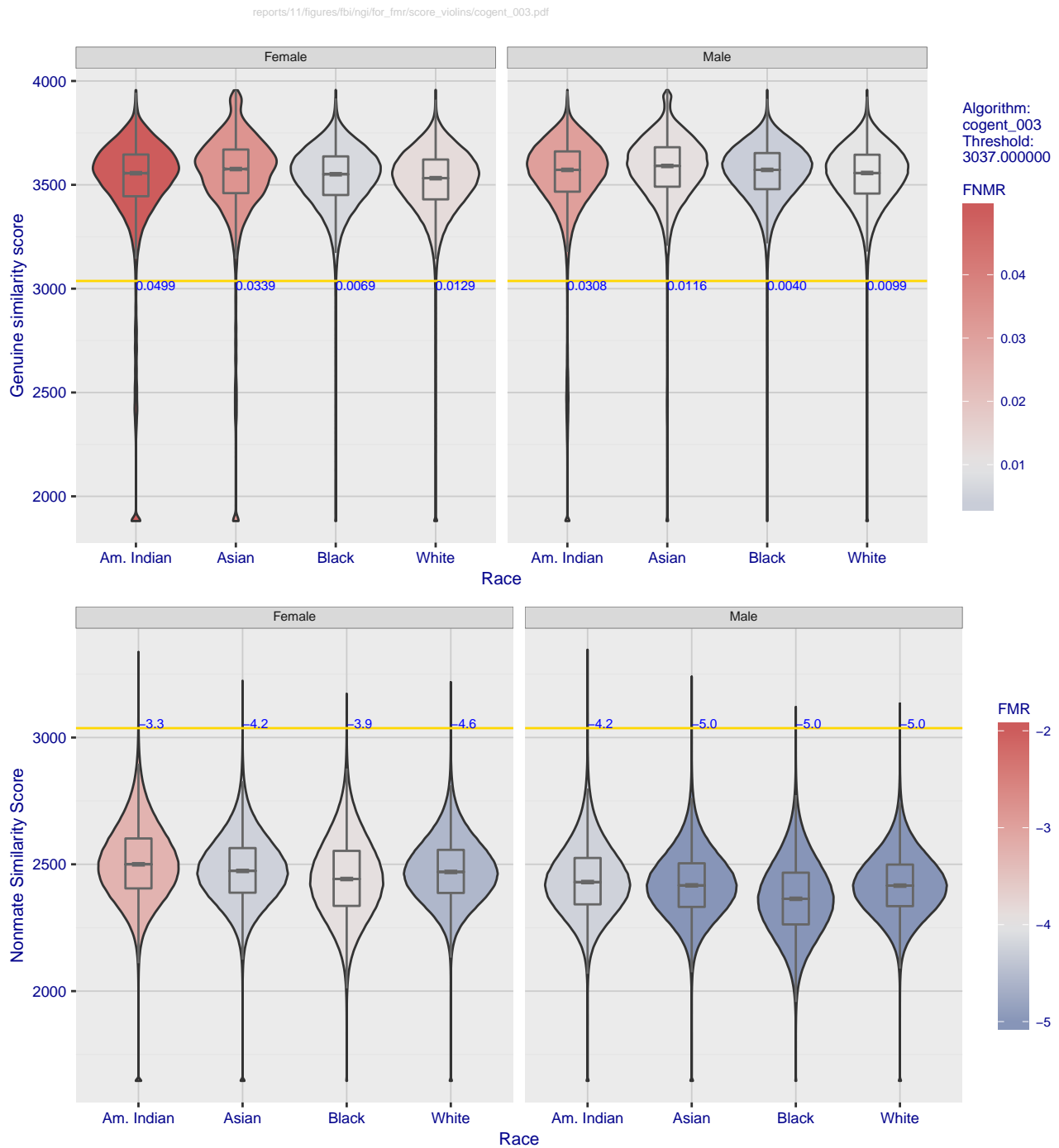


Figure 21: FNMR and FMR score distributions by sex and race, cogent-003. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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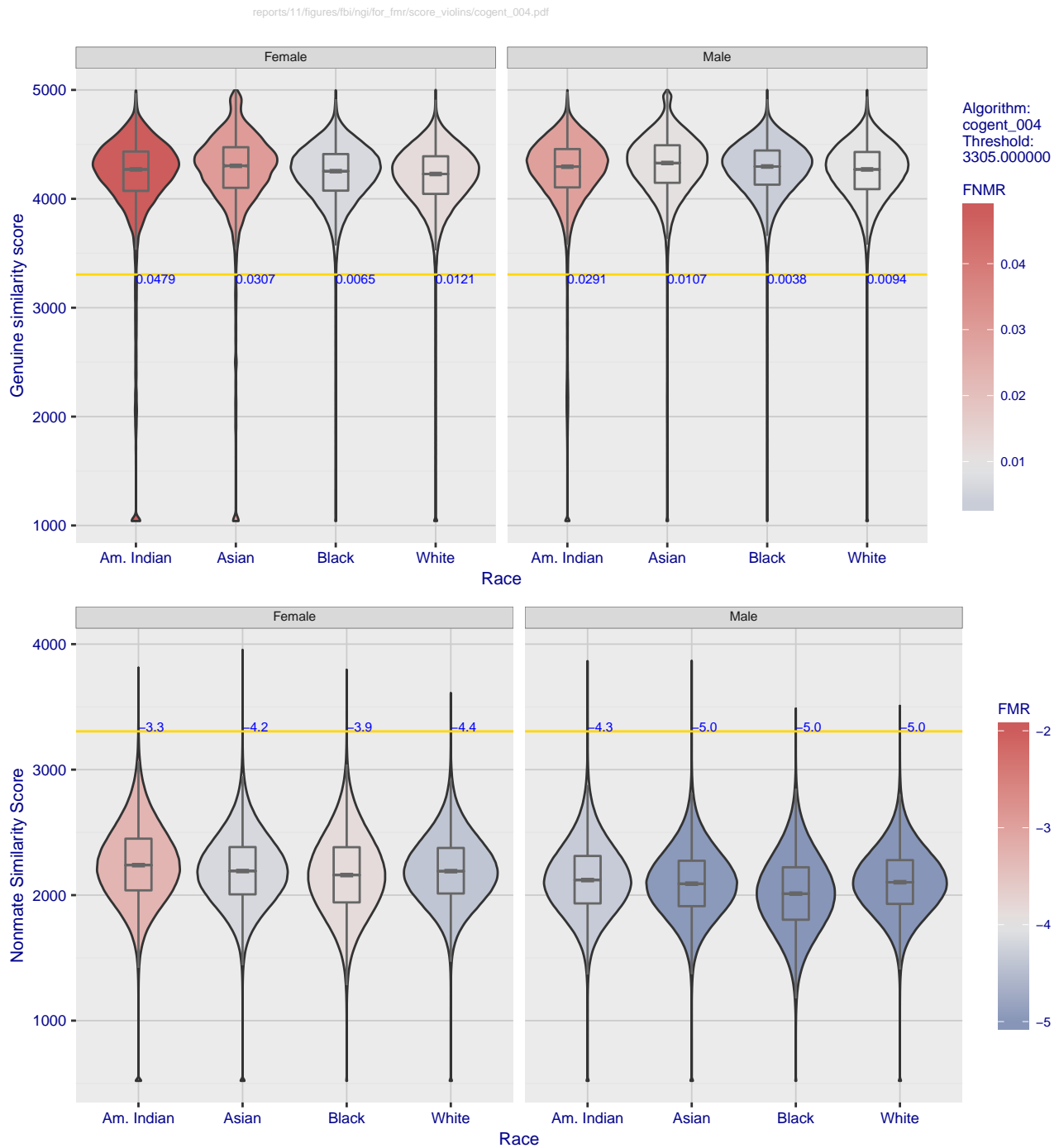


Figure 22: FNMR and FMR score distributions by sex and race, cogent-004. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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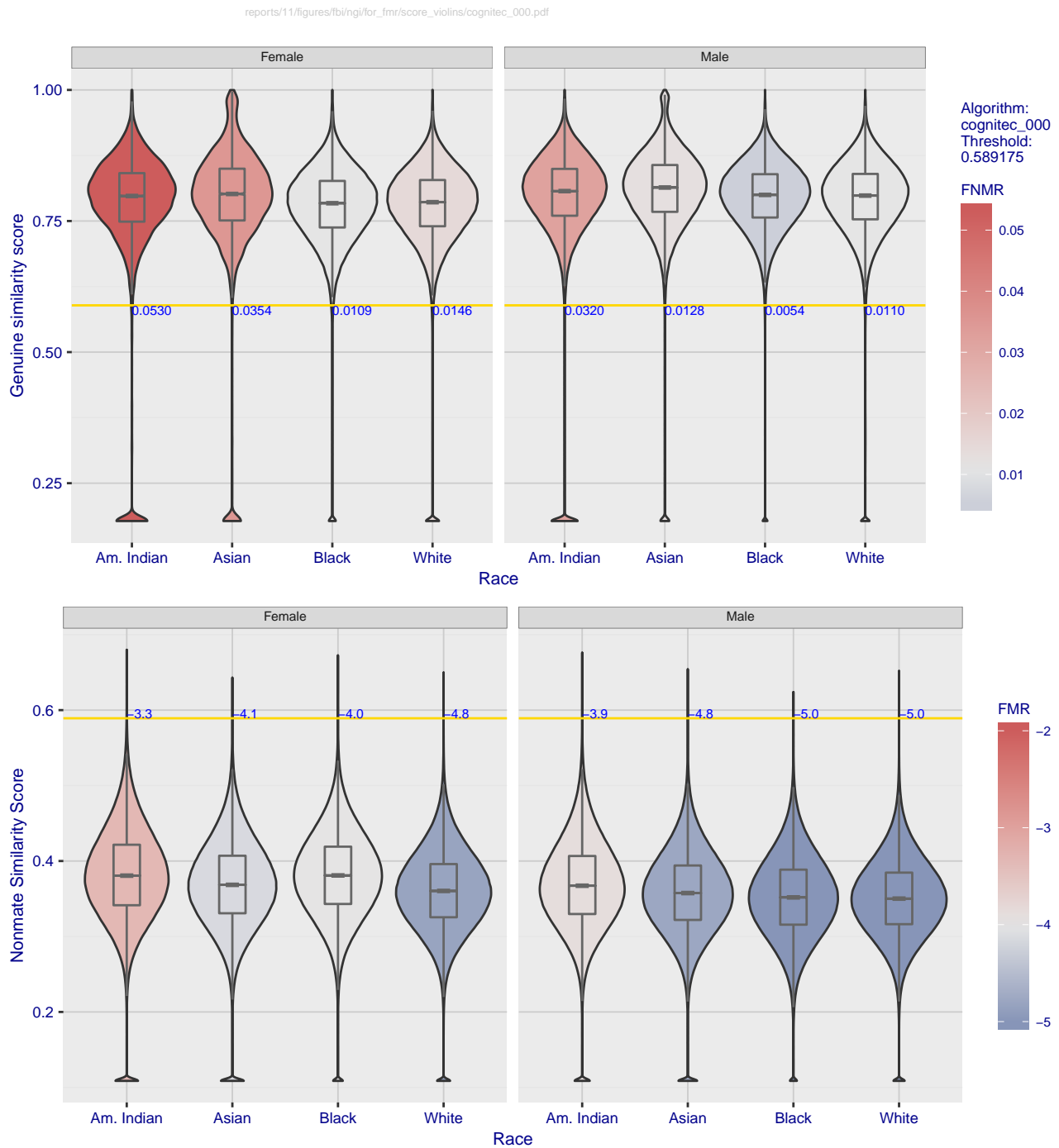


Figure 23: FNMR and FMR score distributions by sex and race, cognitec-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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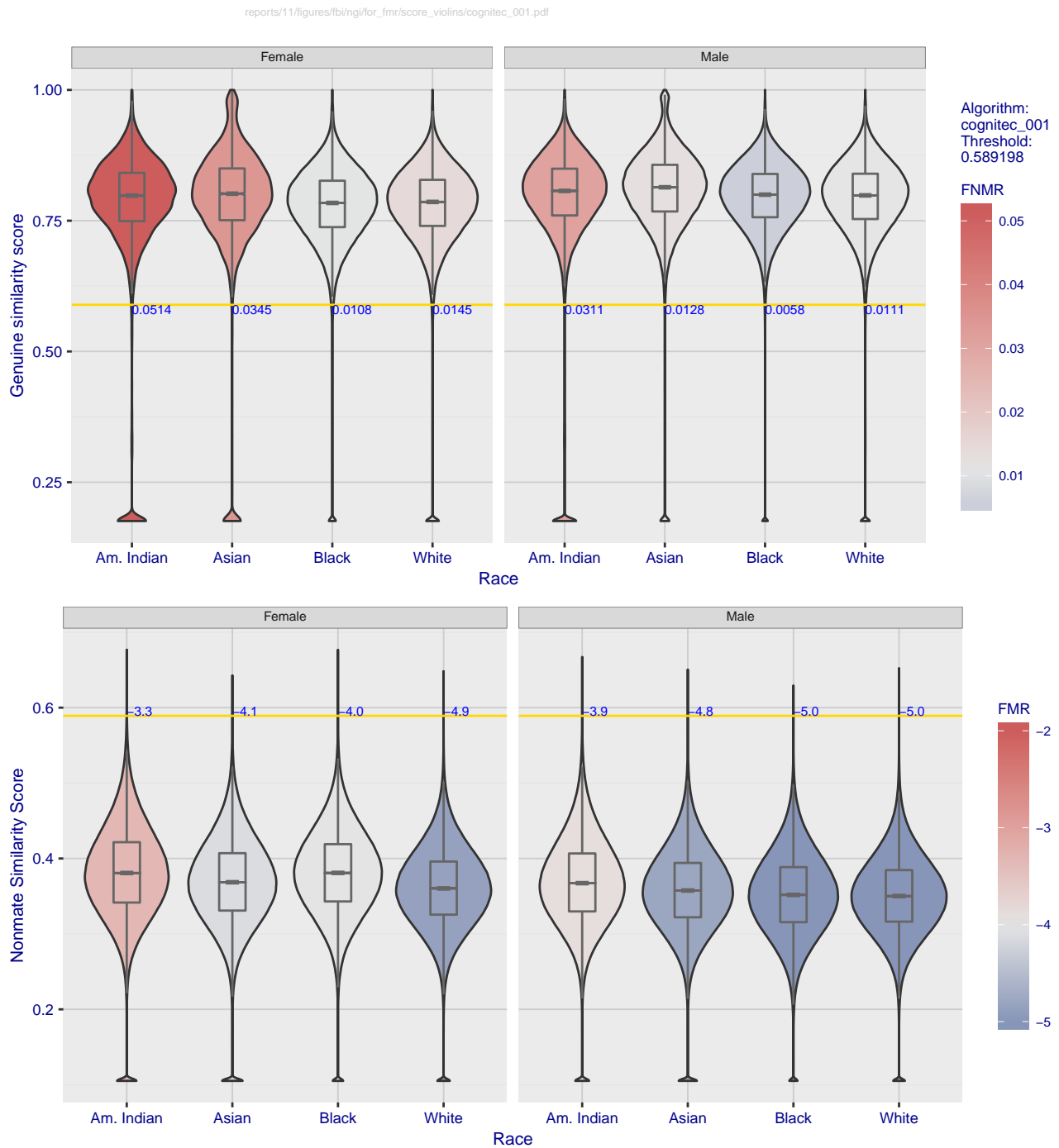


Figure 24: FNMR and FMR score distributions by sex and race, cognitec-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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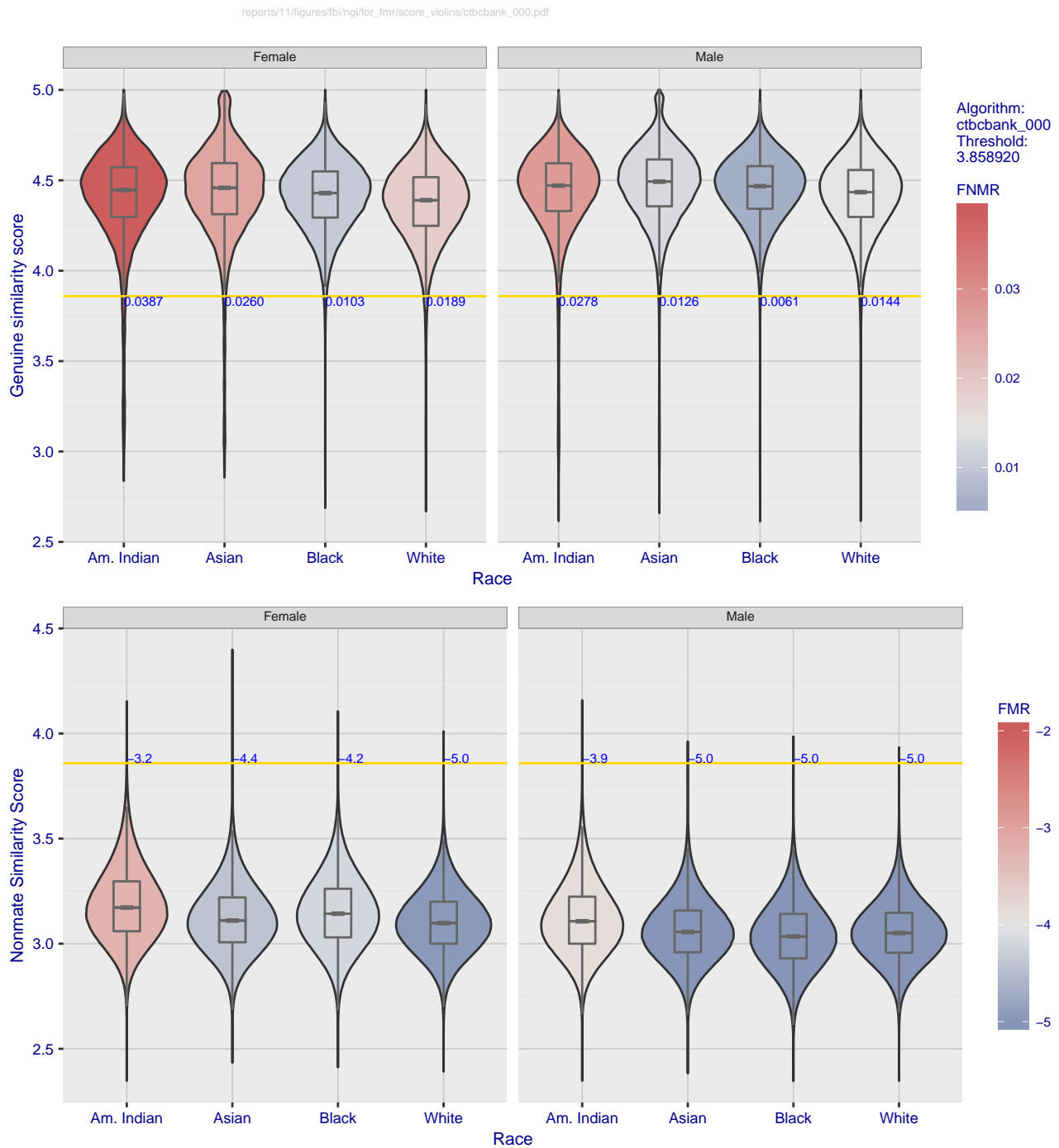


Figure 25: FNMR and FMR score distributions by sex and race, ctcbank-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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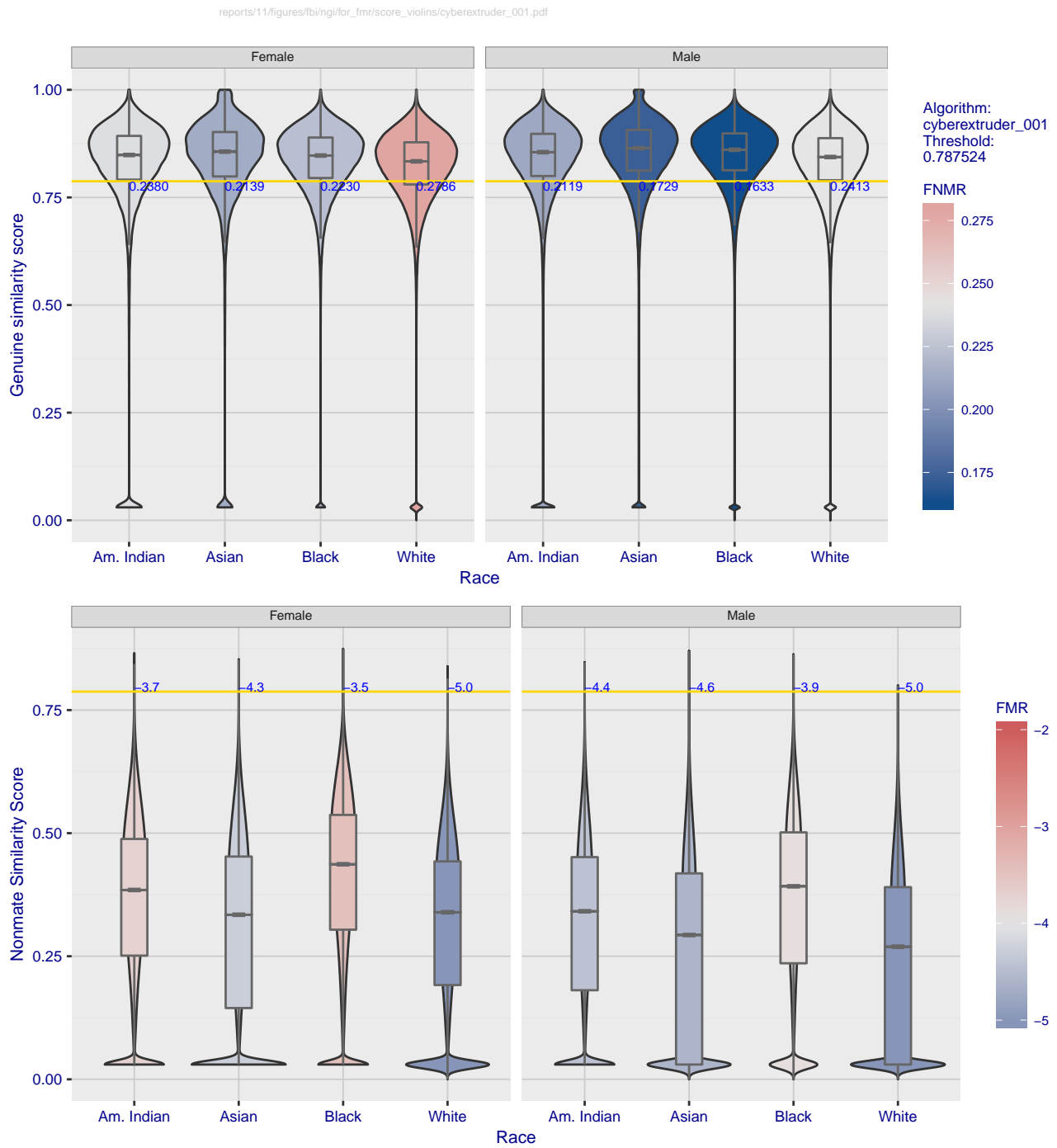


Figure 26: FNMR and FMR score distributions by sex and race, cyberextruder-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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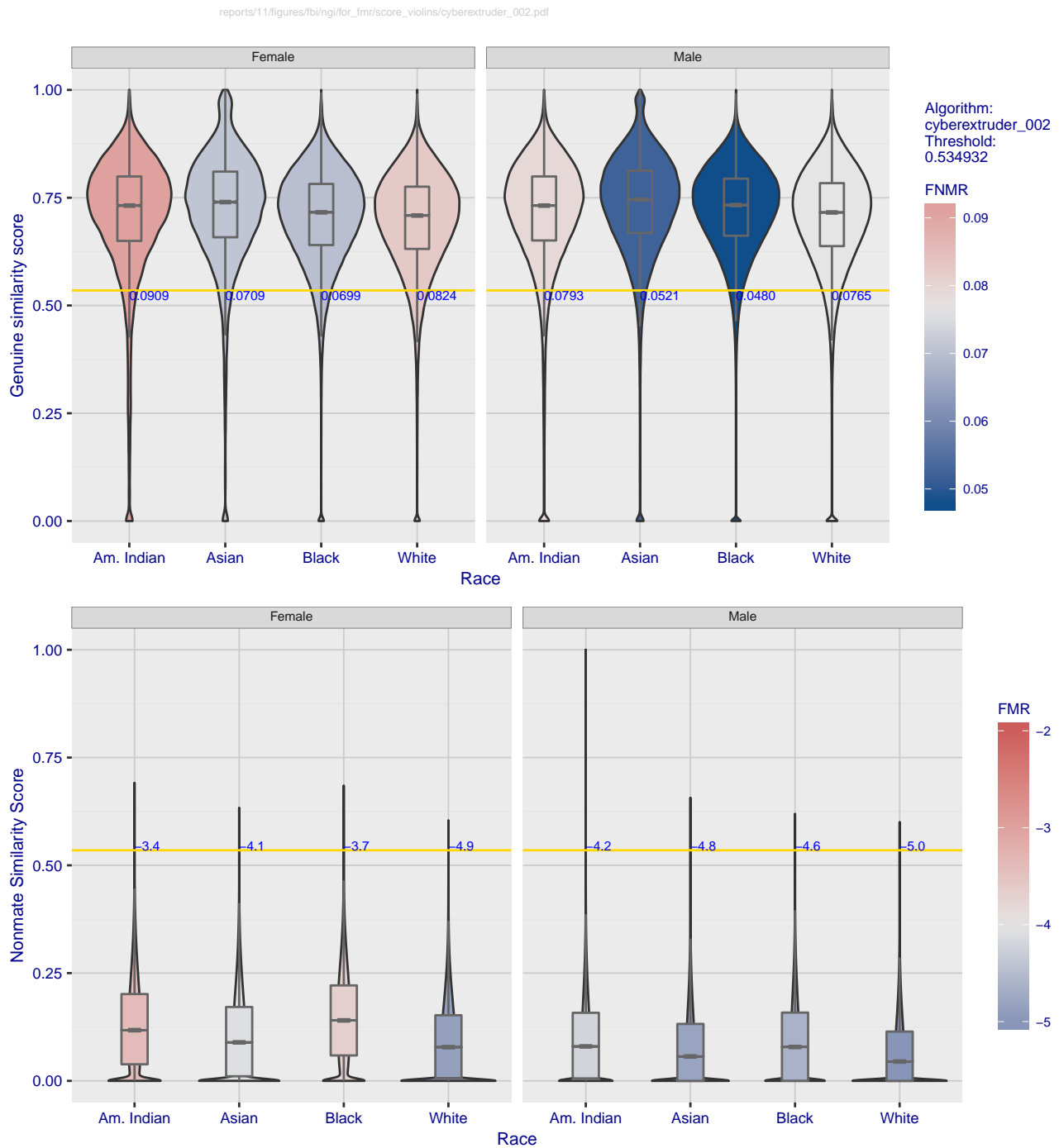


Figure 27: FNMR and FMR score distributions by sex and race, cyberextruder-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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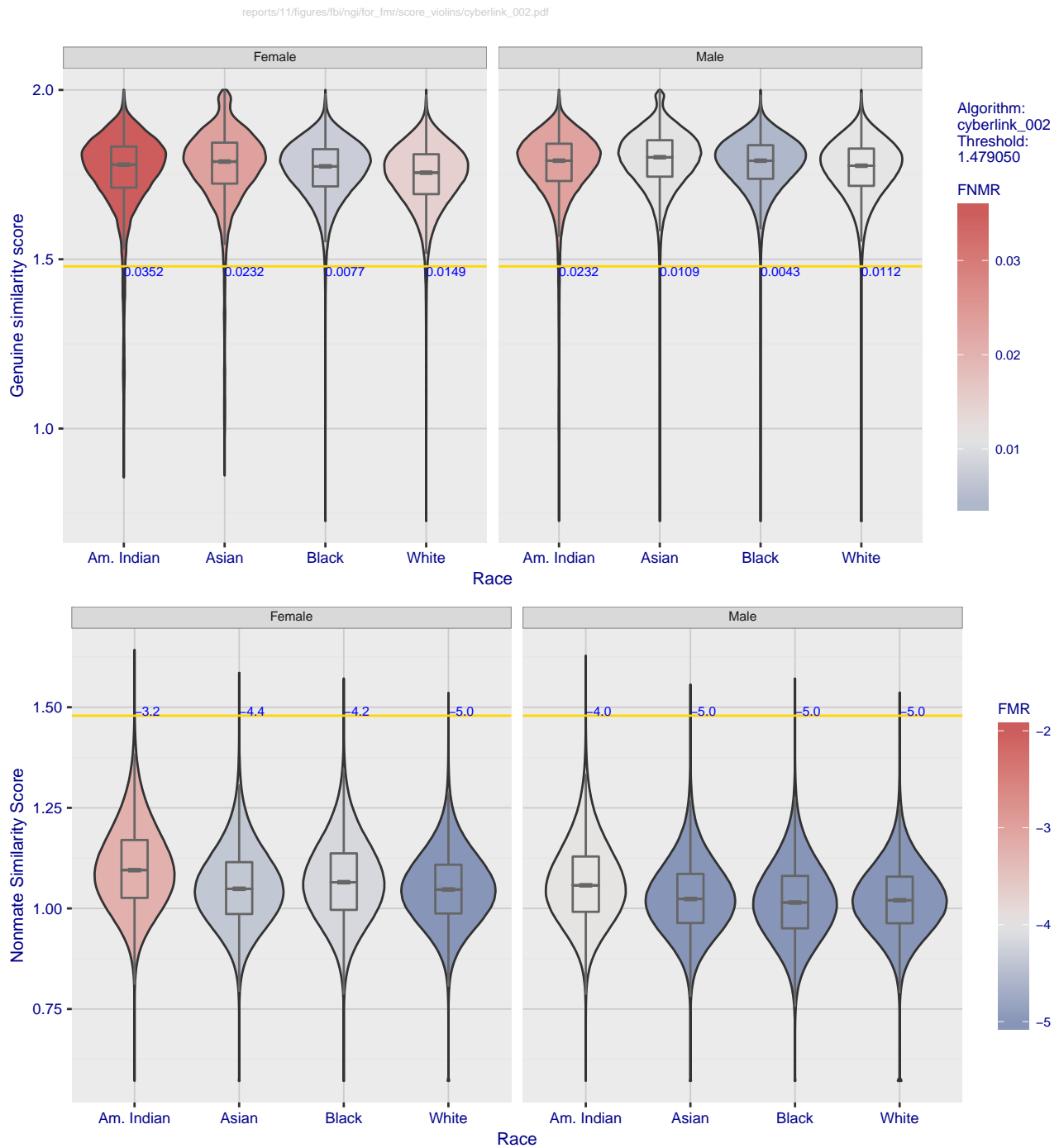


Figure 28: FNMR and FMR score distributions by sex and race, cyberlink-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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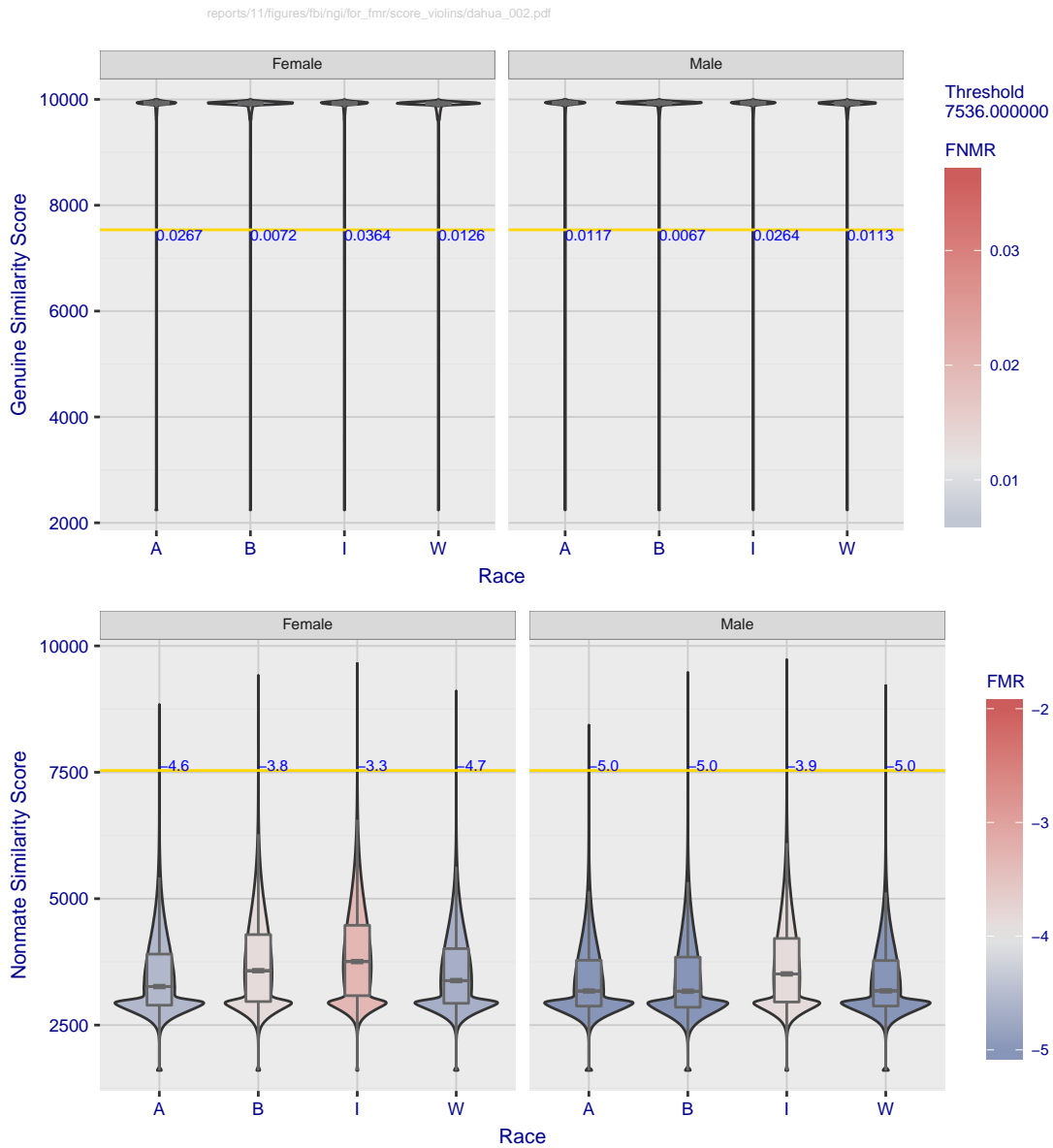


Figure 29: FNMR and FMR score distributions by sex and race, dahua-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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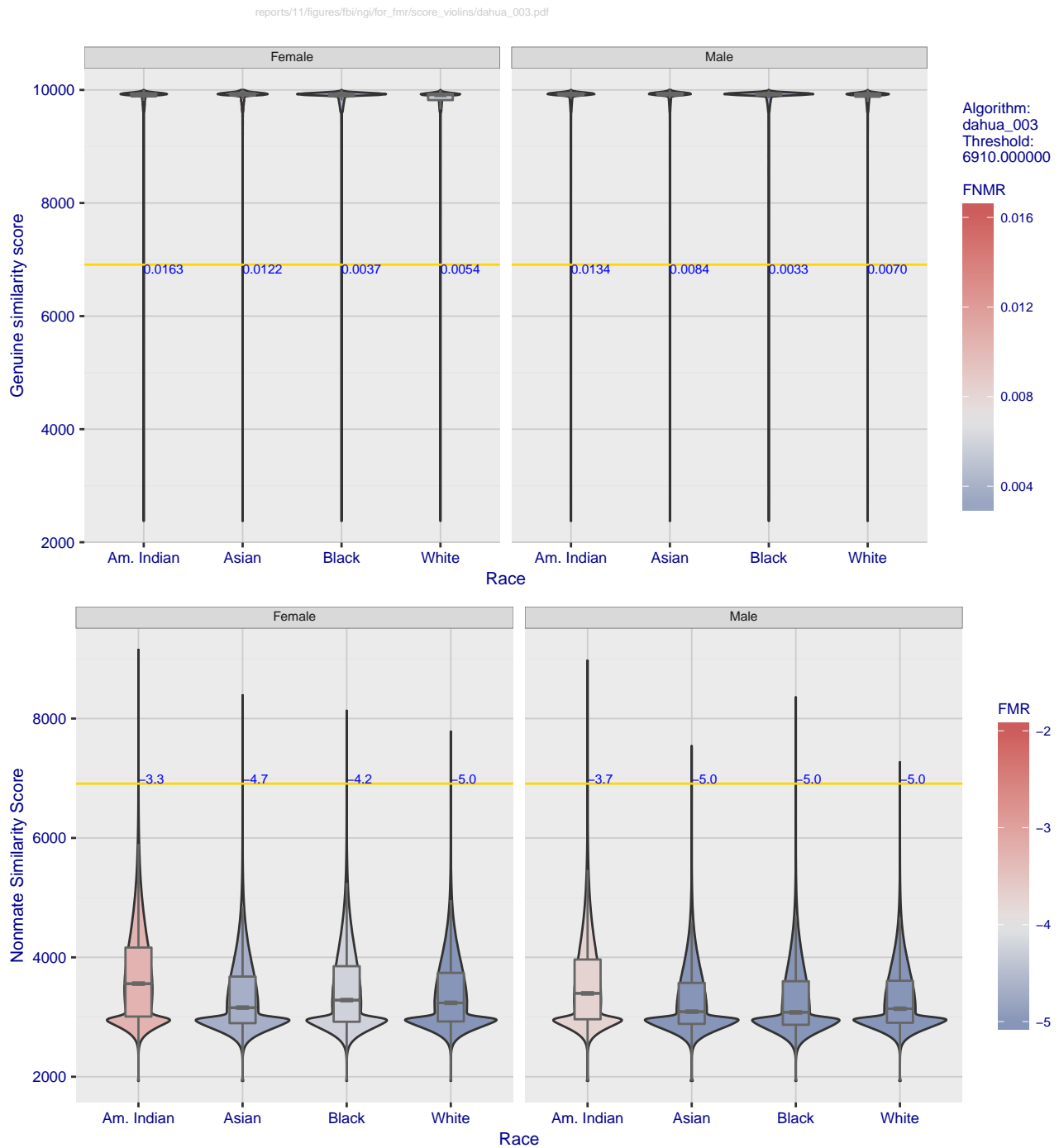


Figure 30: FNMR and FMR score distributions by sex and race, dahua-003. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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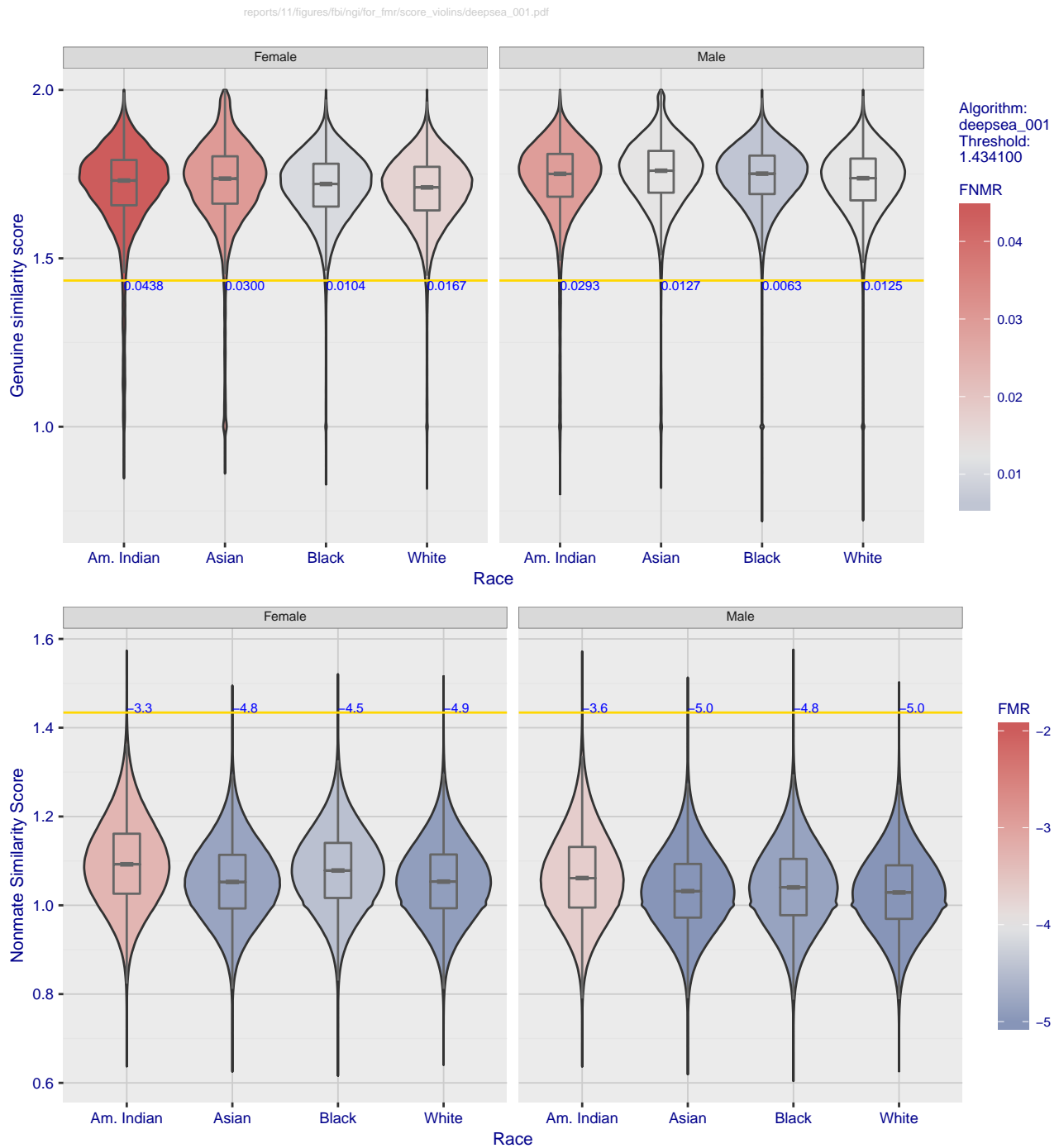


Figure 31: FNMR and FMR score distributions by sex and race, deepsea-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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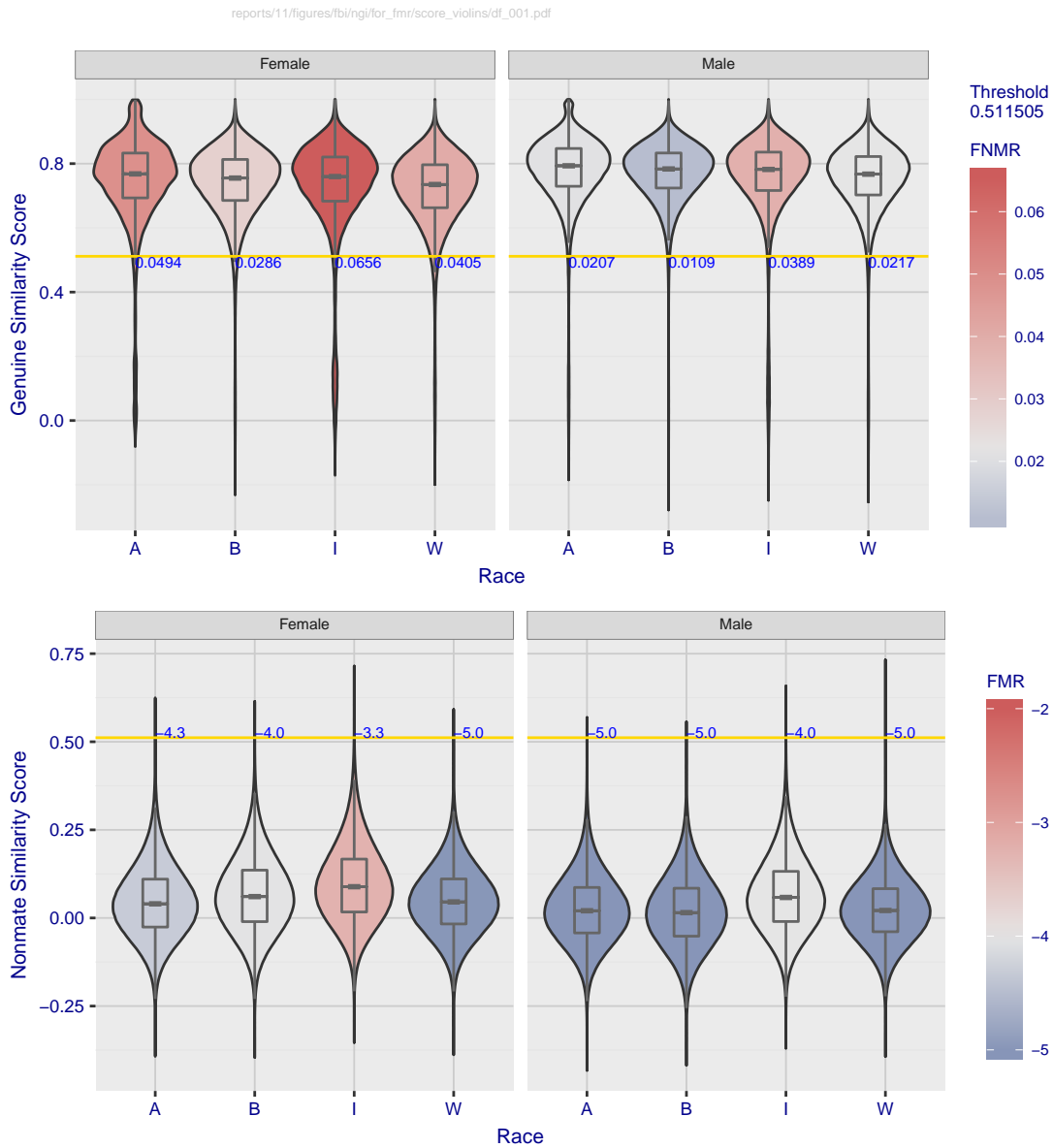


Figure 32: FNMR and FMR score distributions by sex and race, df=001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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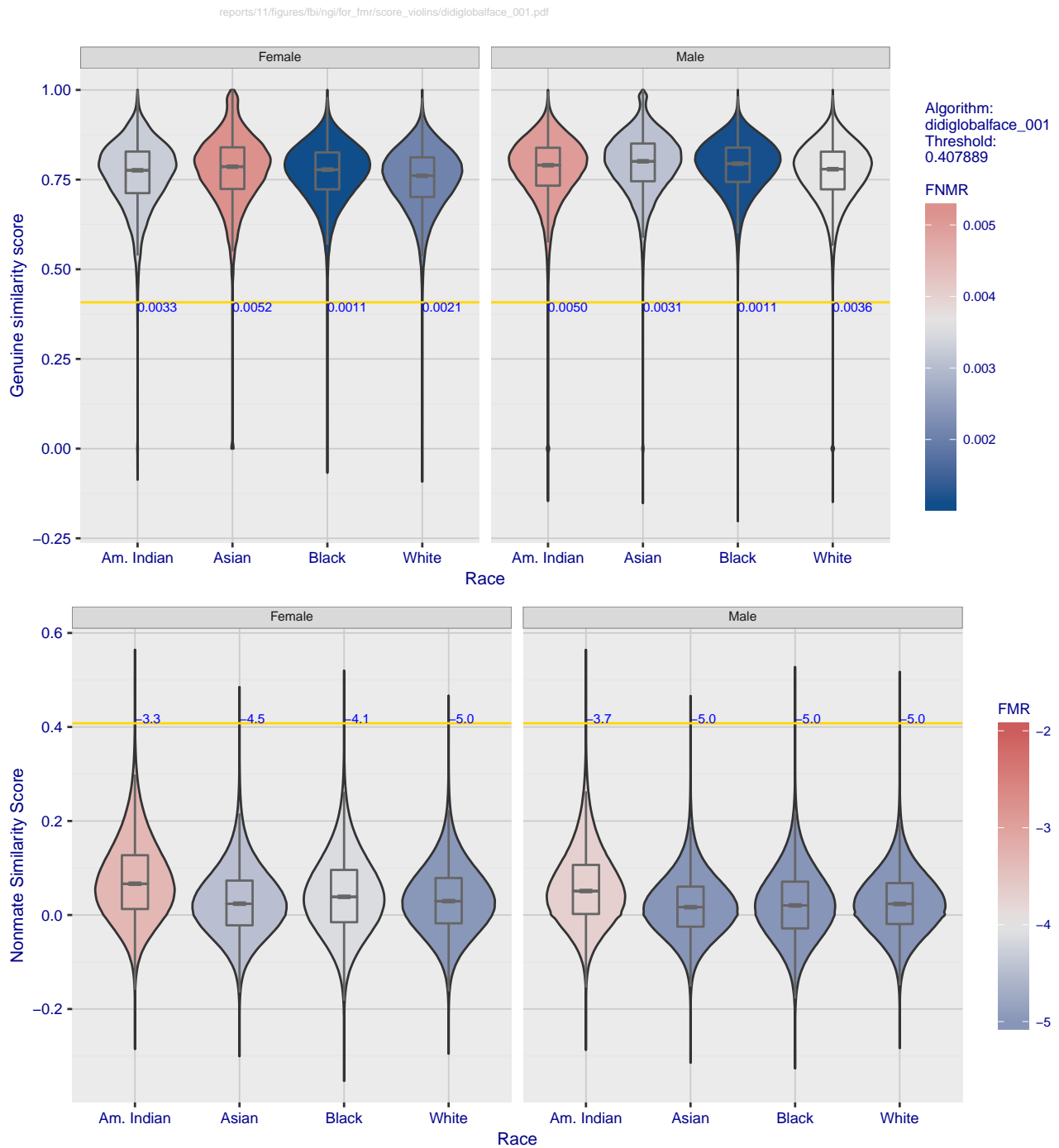


Figure 33: FNMR and FMR score distributions by sex and race, didiglobalface-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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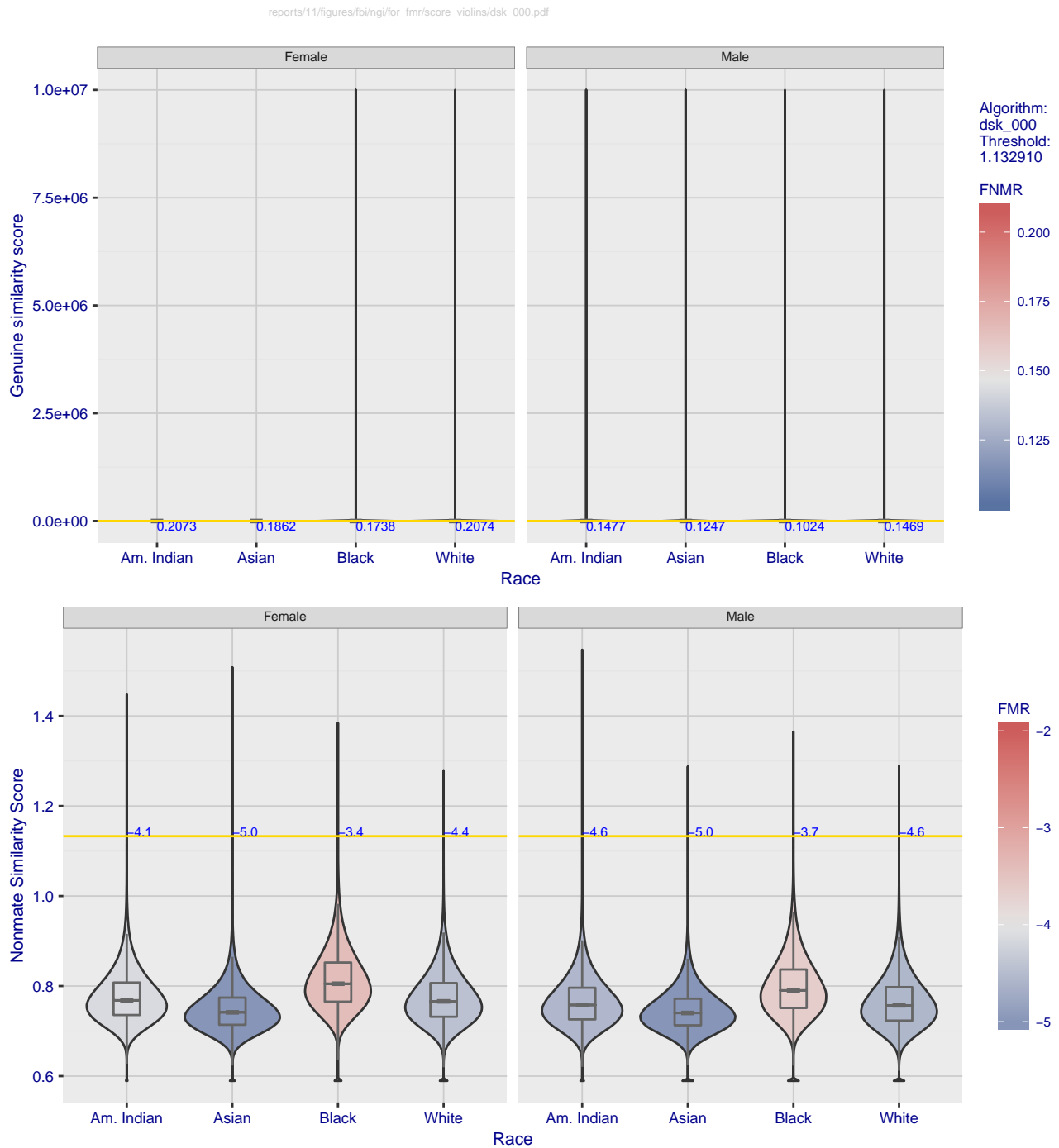


Figure 34: FNMR and FMR score distributions by sex and race, dsk-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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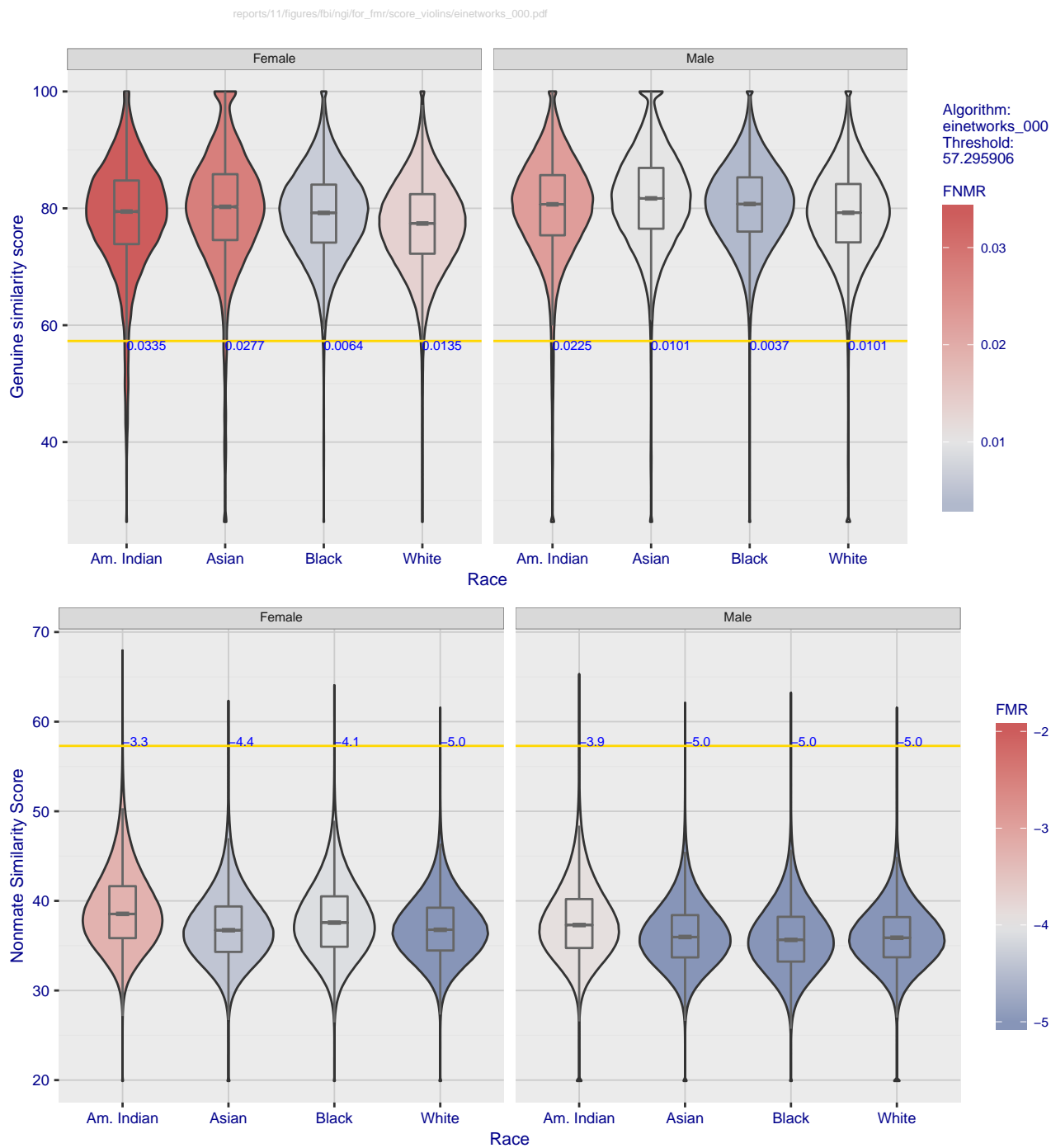


Figure 35: FNMR and FMR score distributions by sex and race, einetworks-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

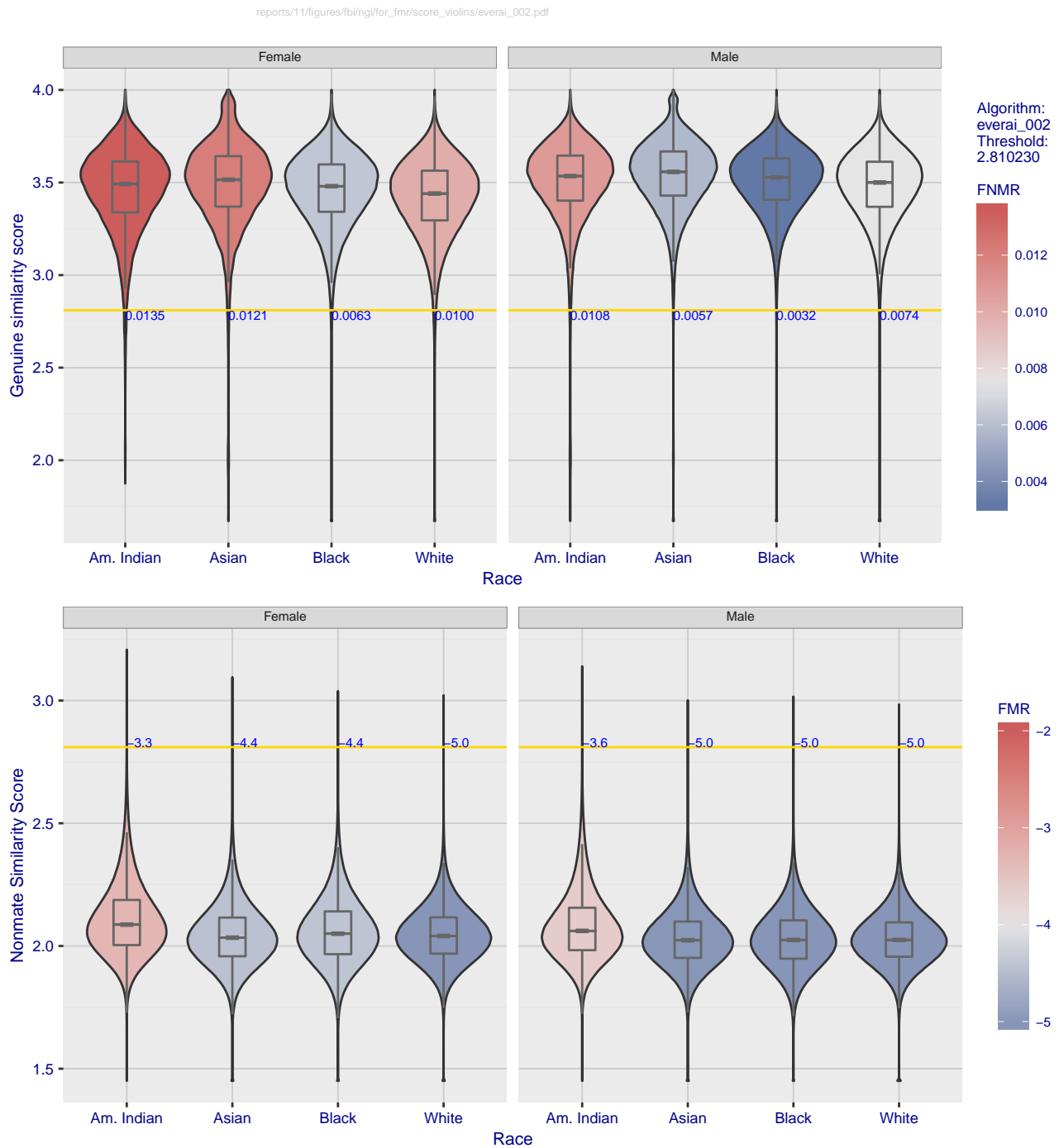


Figure 36: FNMR and FMR score distributions by sex and race, everai-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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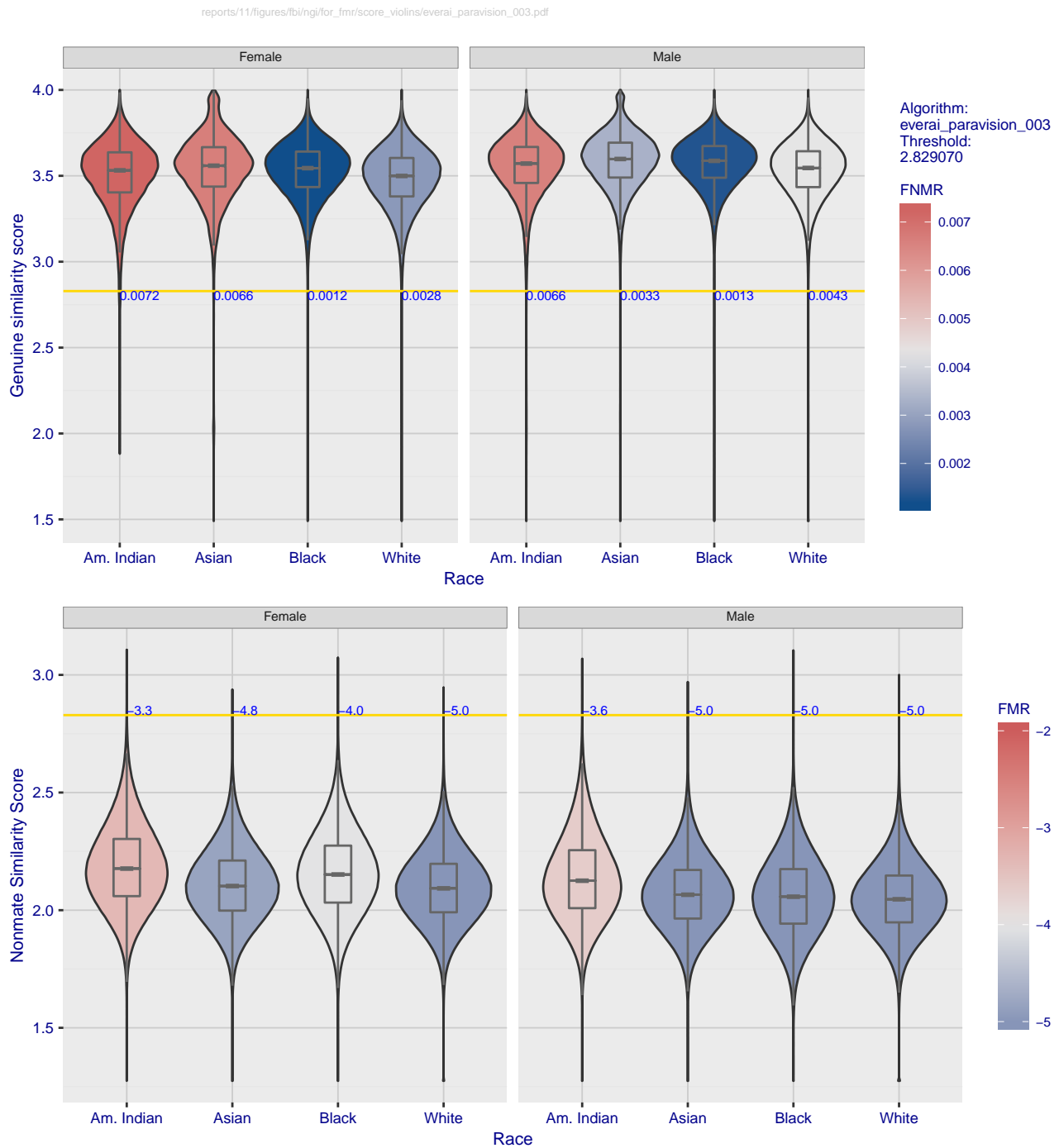


Figure 37: FNMR and FMR score distributions by sex and race, everai-paravision-003. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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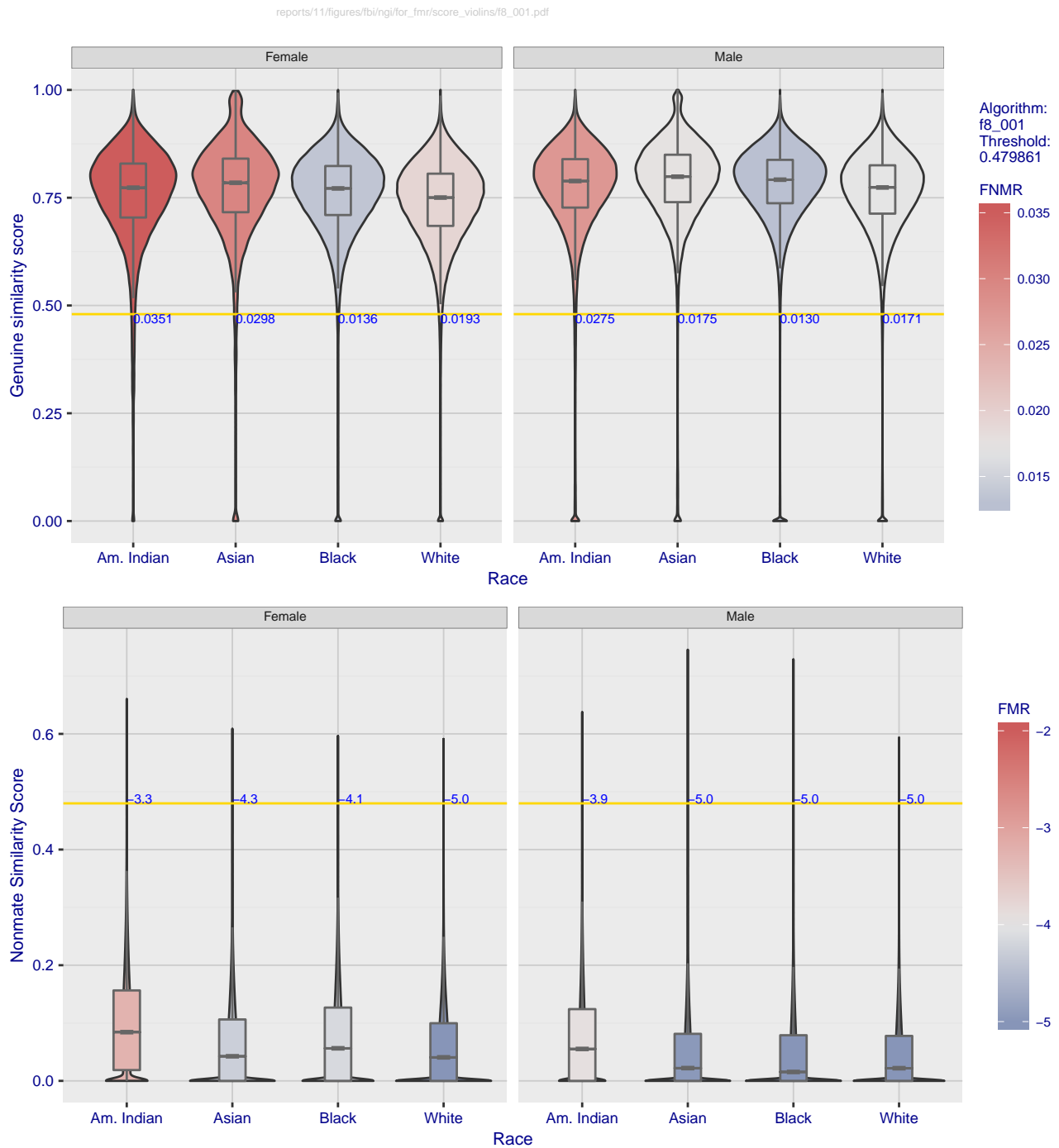


Figure 38: FNMR and FMR score distributions by sex and race, f8-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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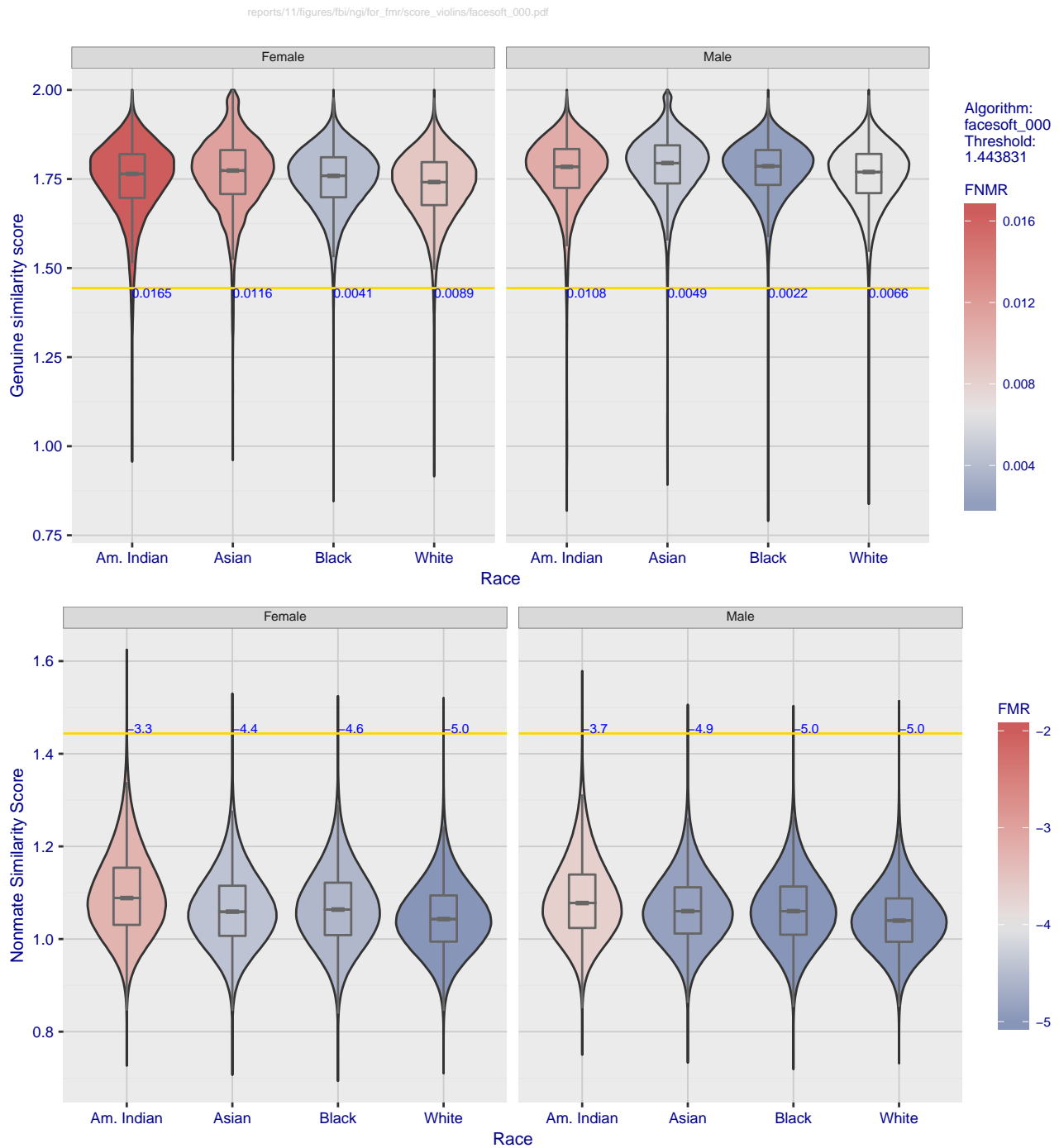


Figure 39: FNMR and FMR score distributions by sex and race, facesoft-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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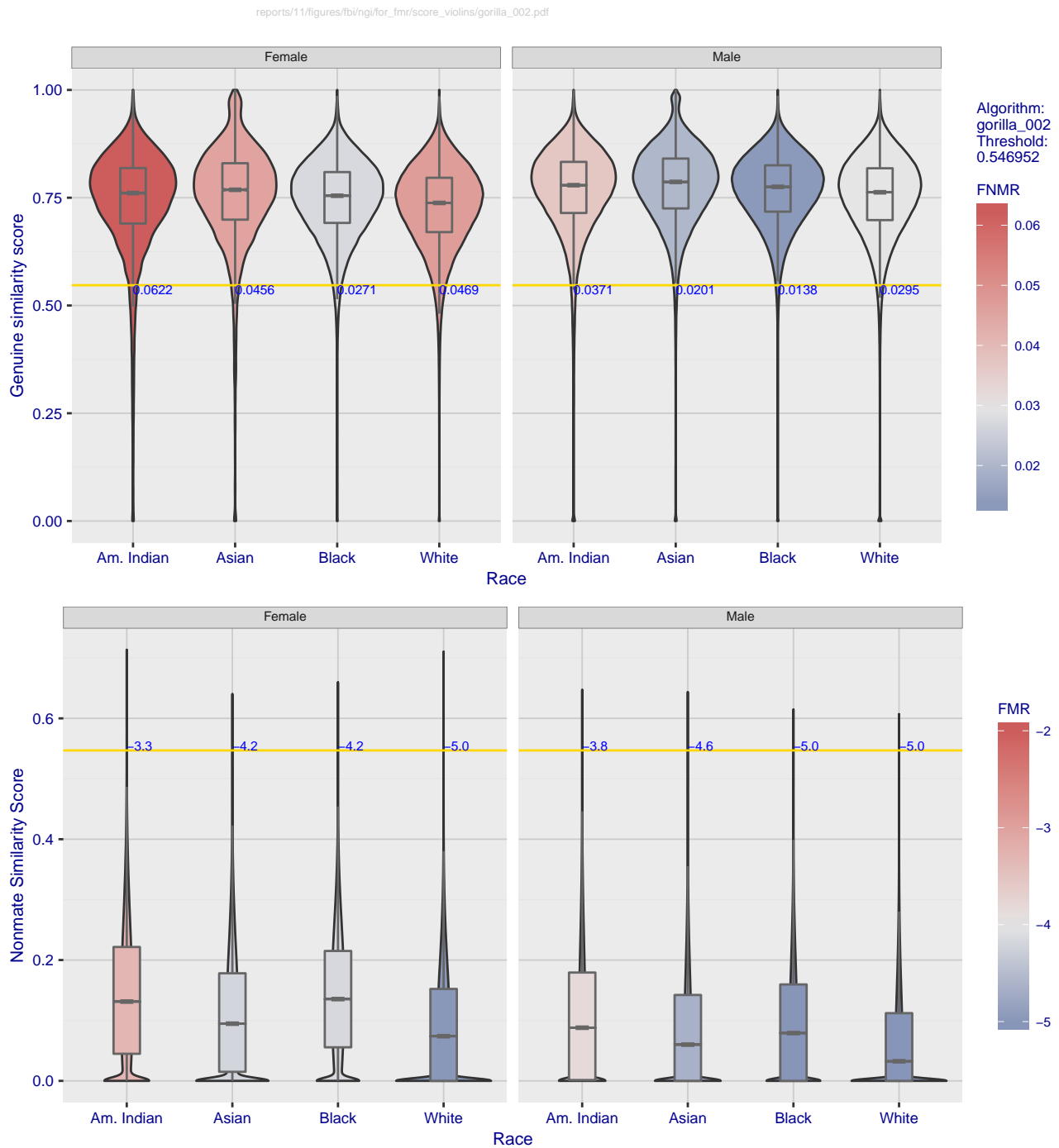


Figure 40: FNMR and FMR score distributions by sex and race, gorilla-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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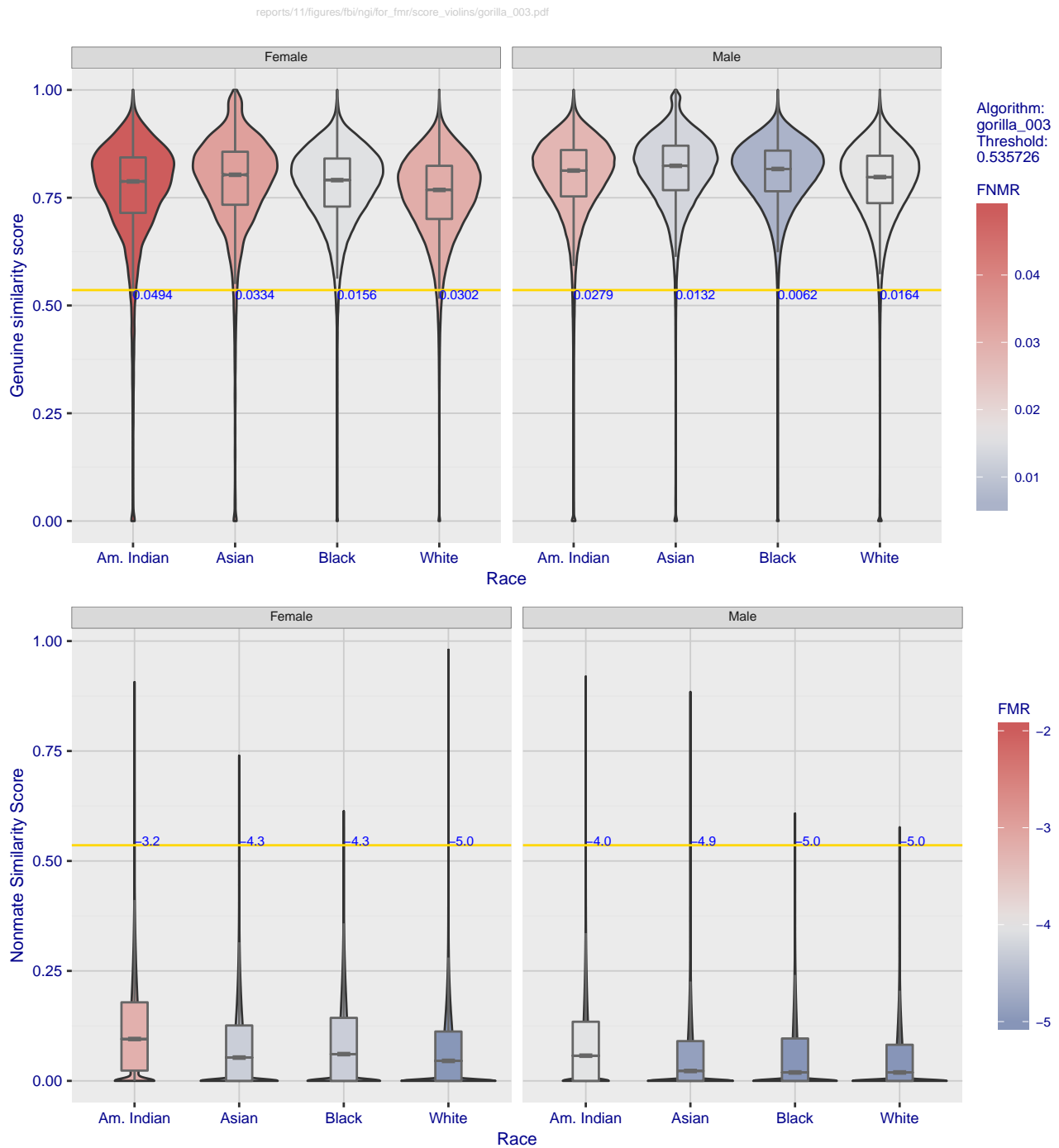


Figure 41: FNMR and FMR score distributions by sex and race, gorilla-003. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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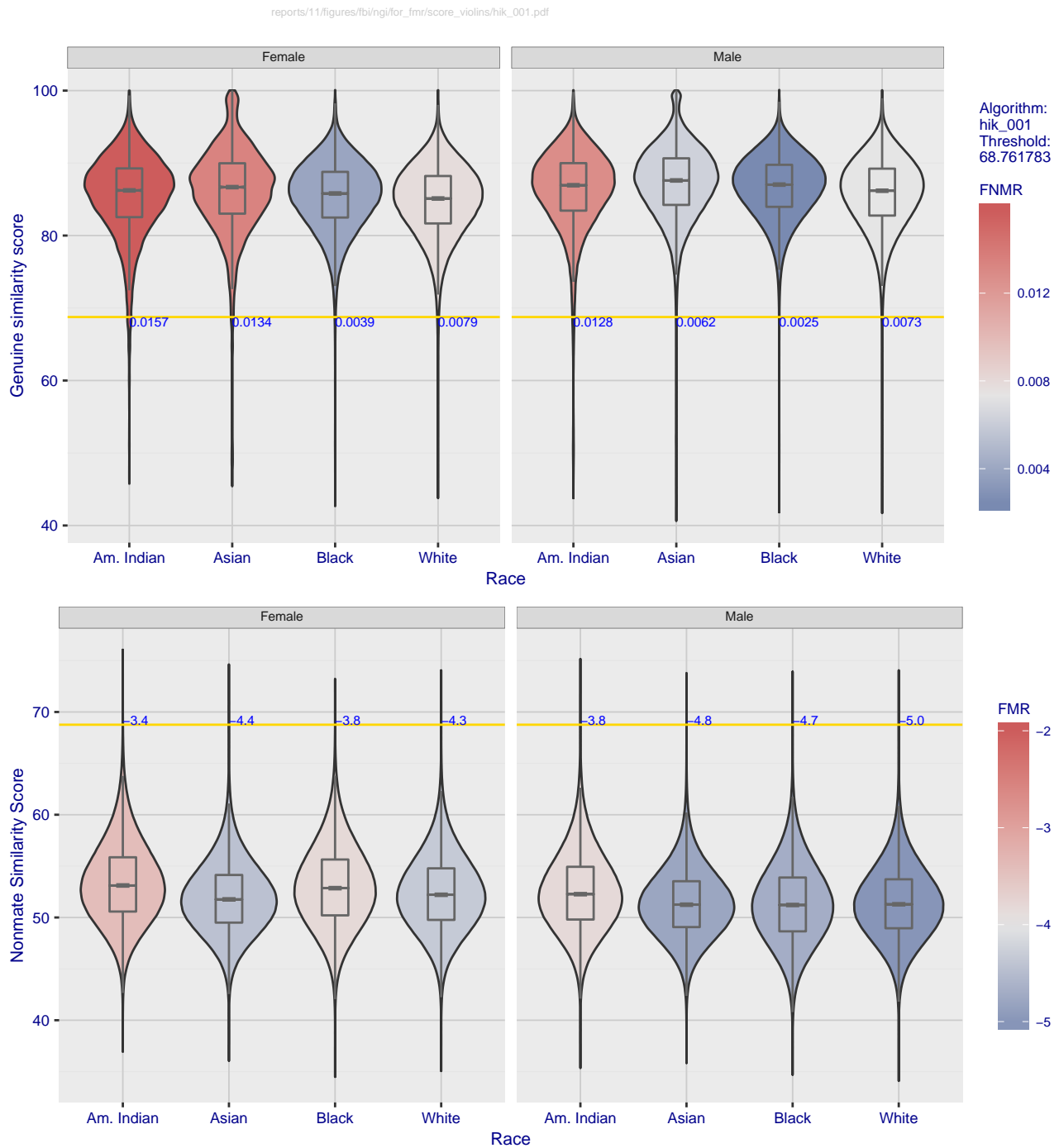


Figure 42: FNMR and FMR score distributions by sex and race, hik-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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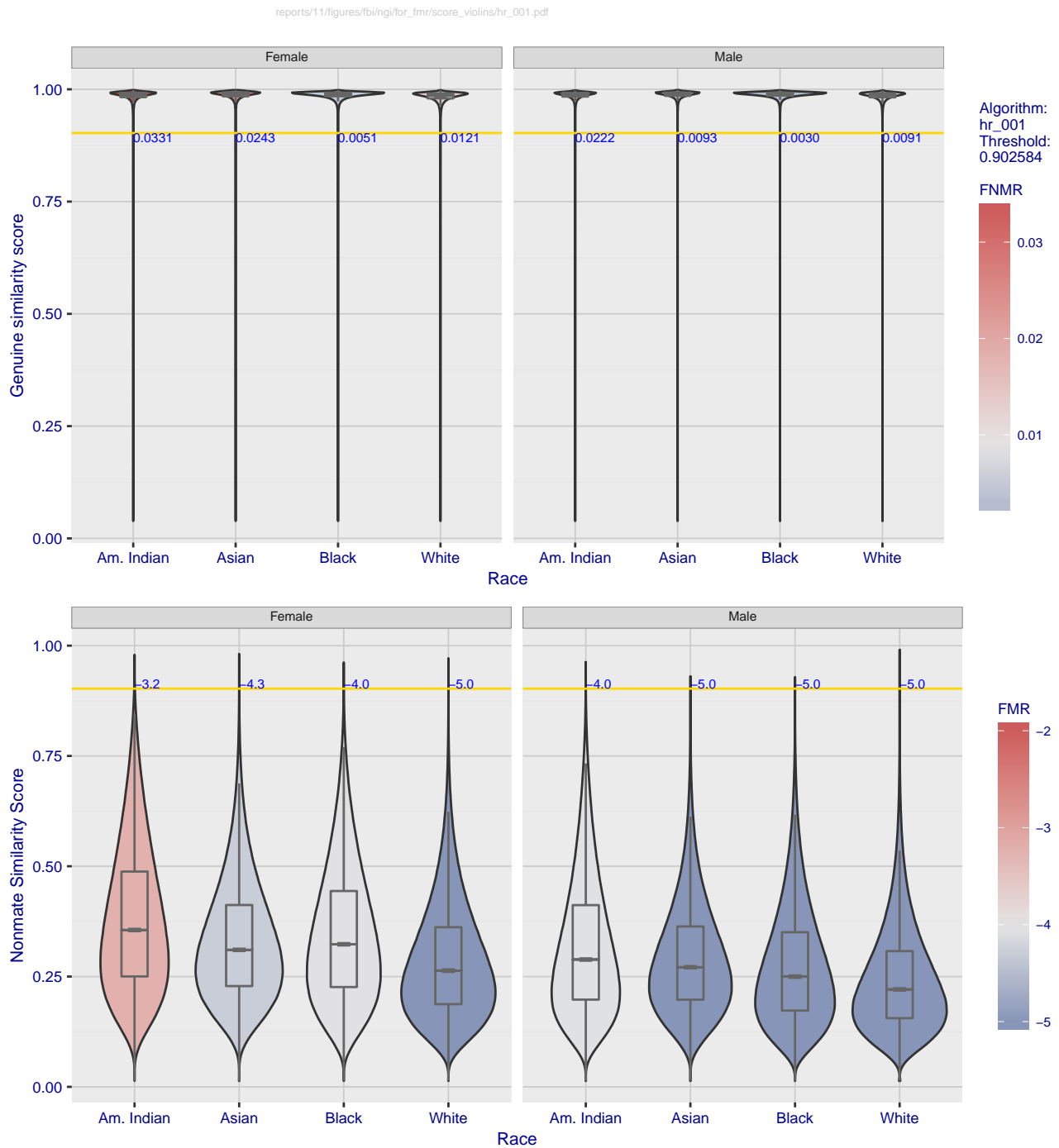


Figure 43: FNMR and FMR score distributions by sex and race, hr-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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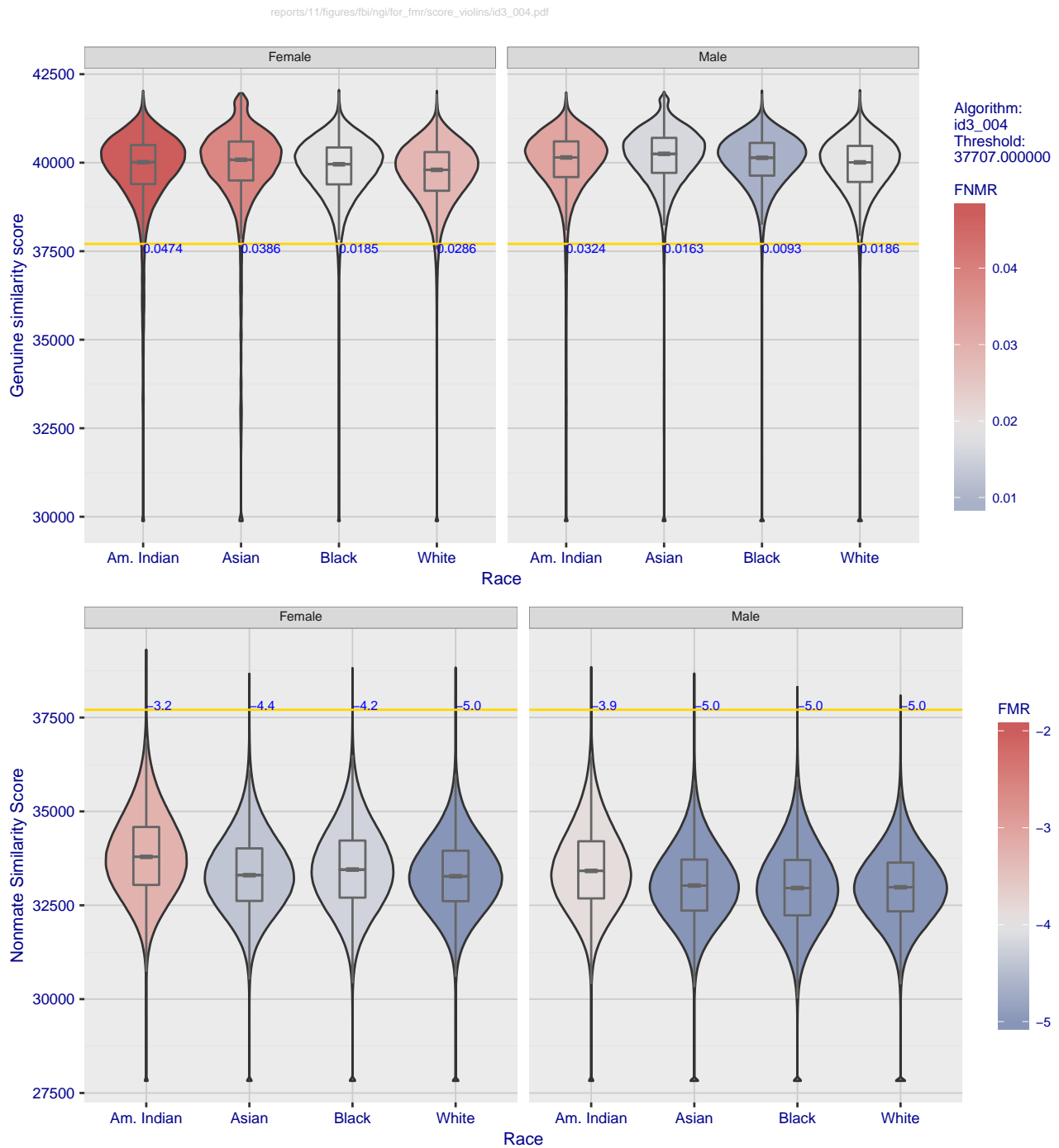


Figure 44: FNMR and FMR score distributions by sex and race, id3-004. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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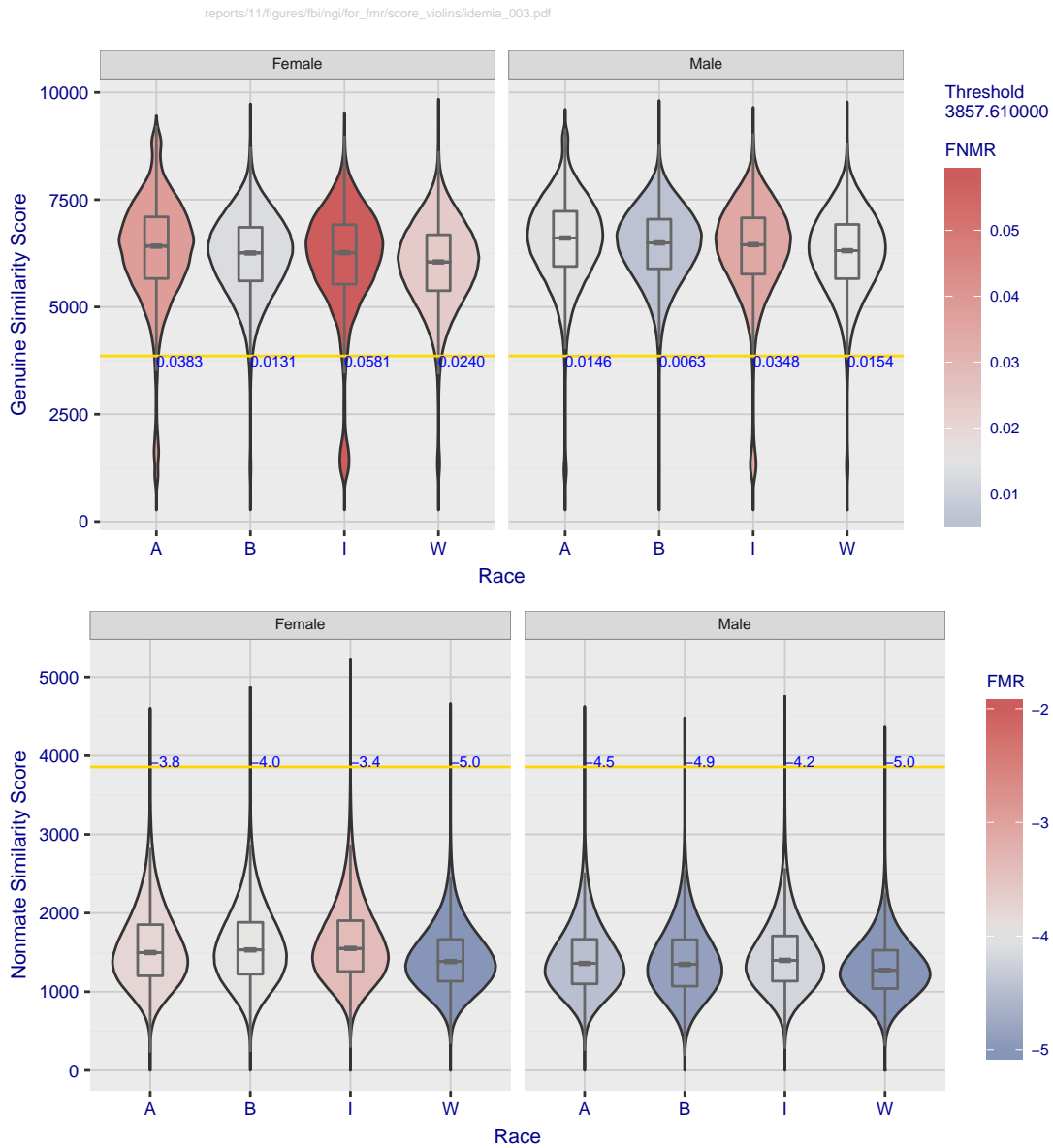


Figure 45: FNMR and FMR score distributions by sex and race, idemia-003. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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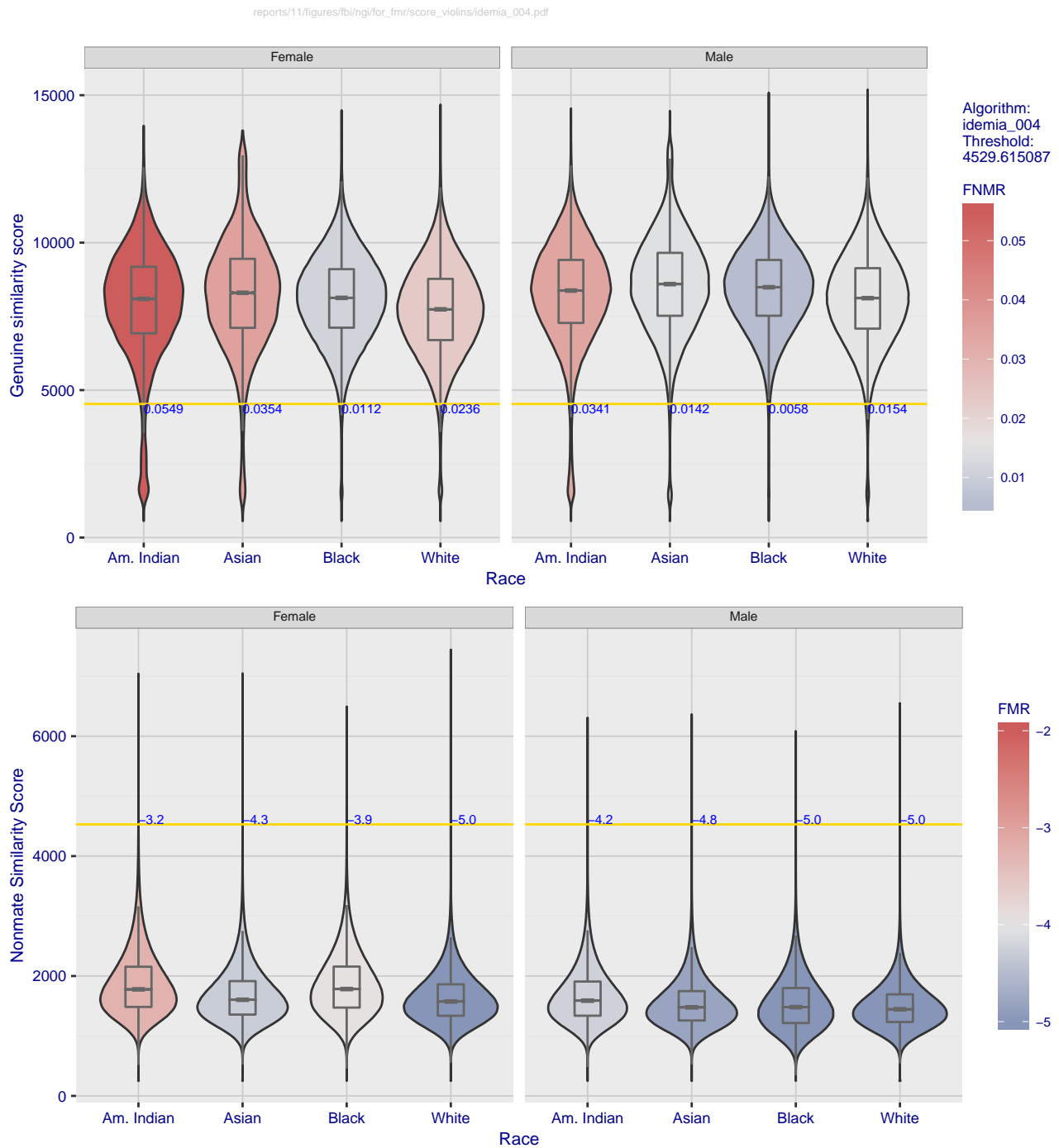


Figure 46: FNMR and FMR score distributions by sex and race, idemia-004. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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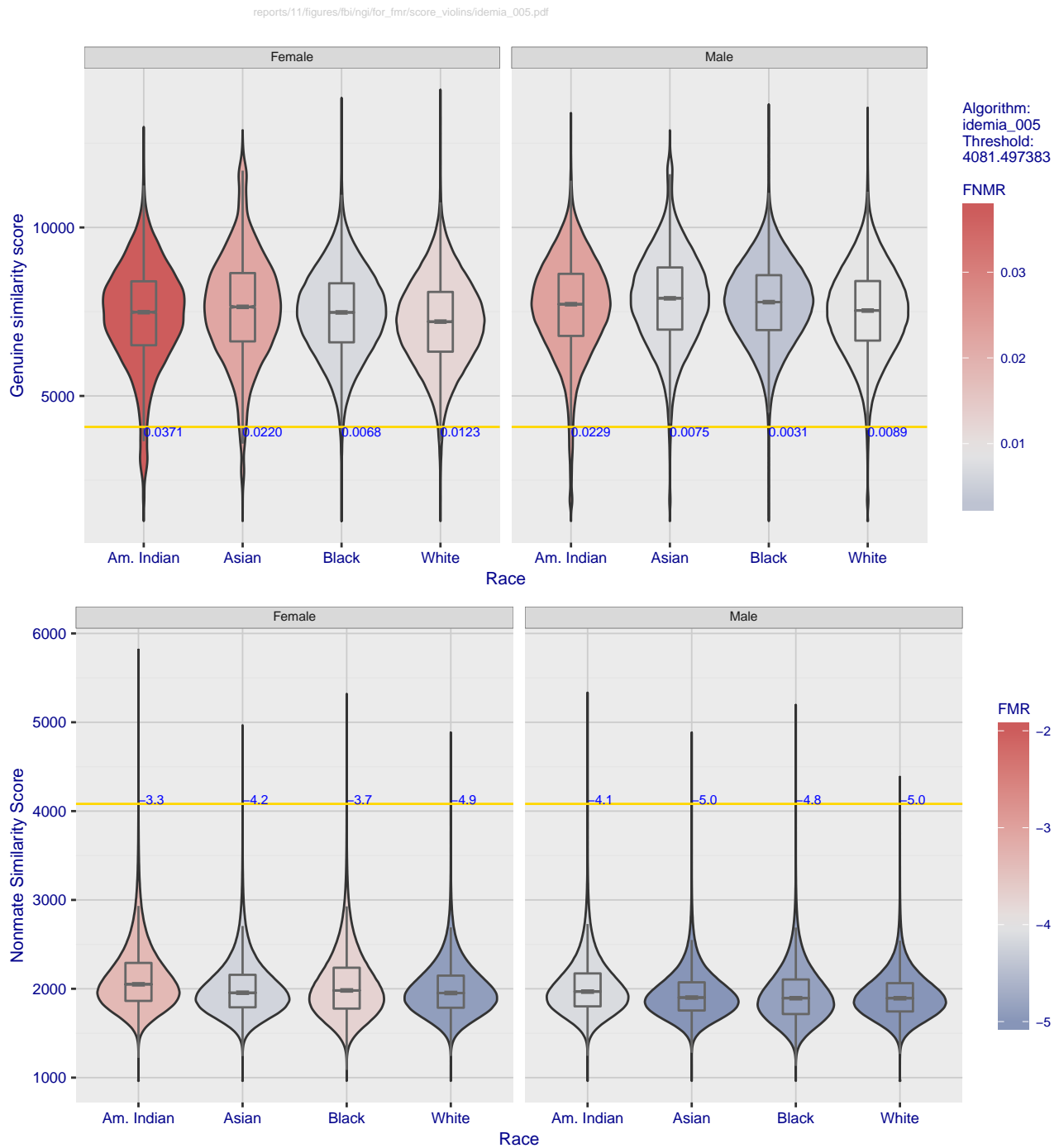


Figure 47: FNMR and FMR score distributions by sex and race, idemia-005. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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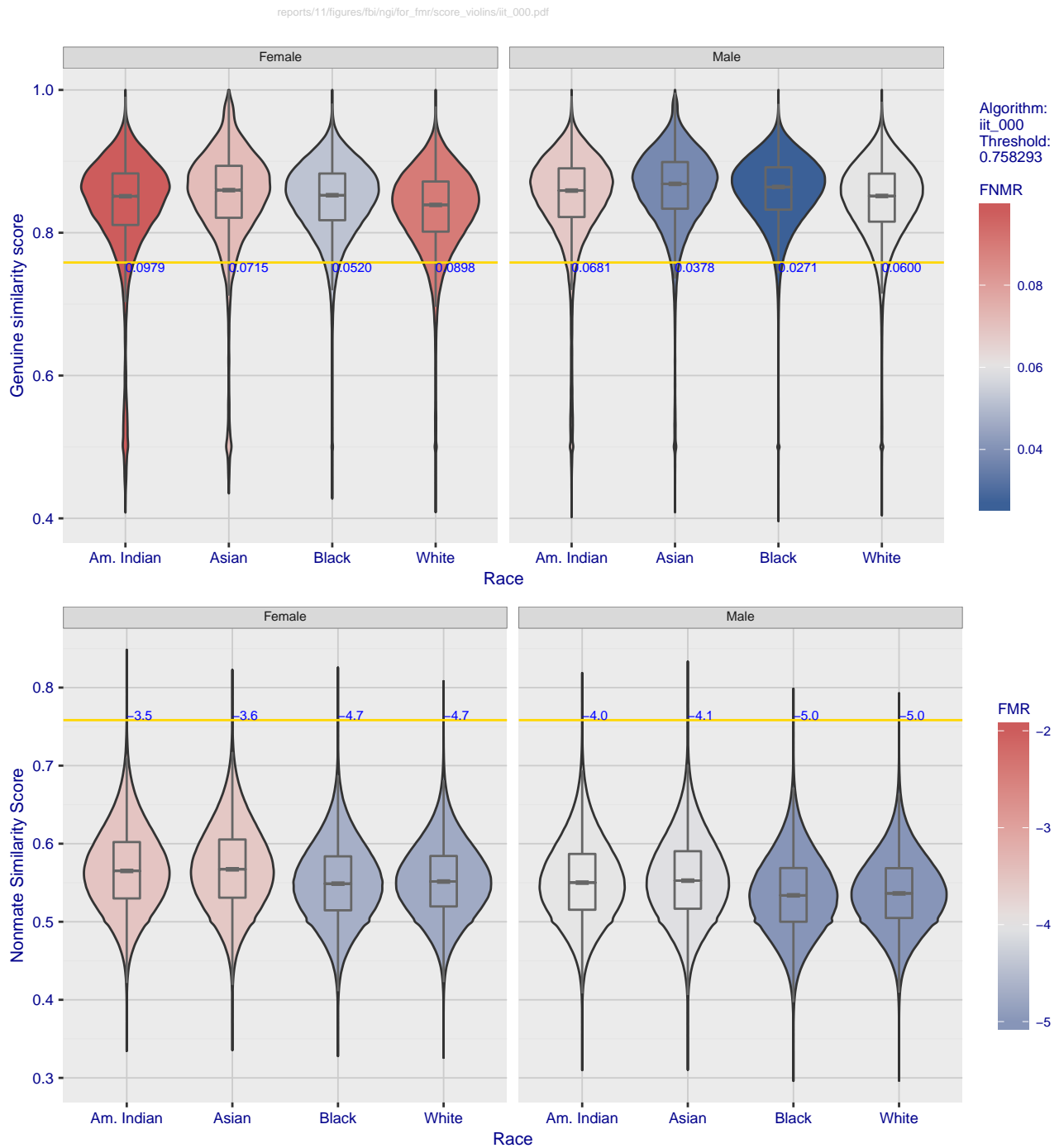


Figure 48: FNMR and FMR score distributions by sex and race, iit-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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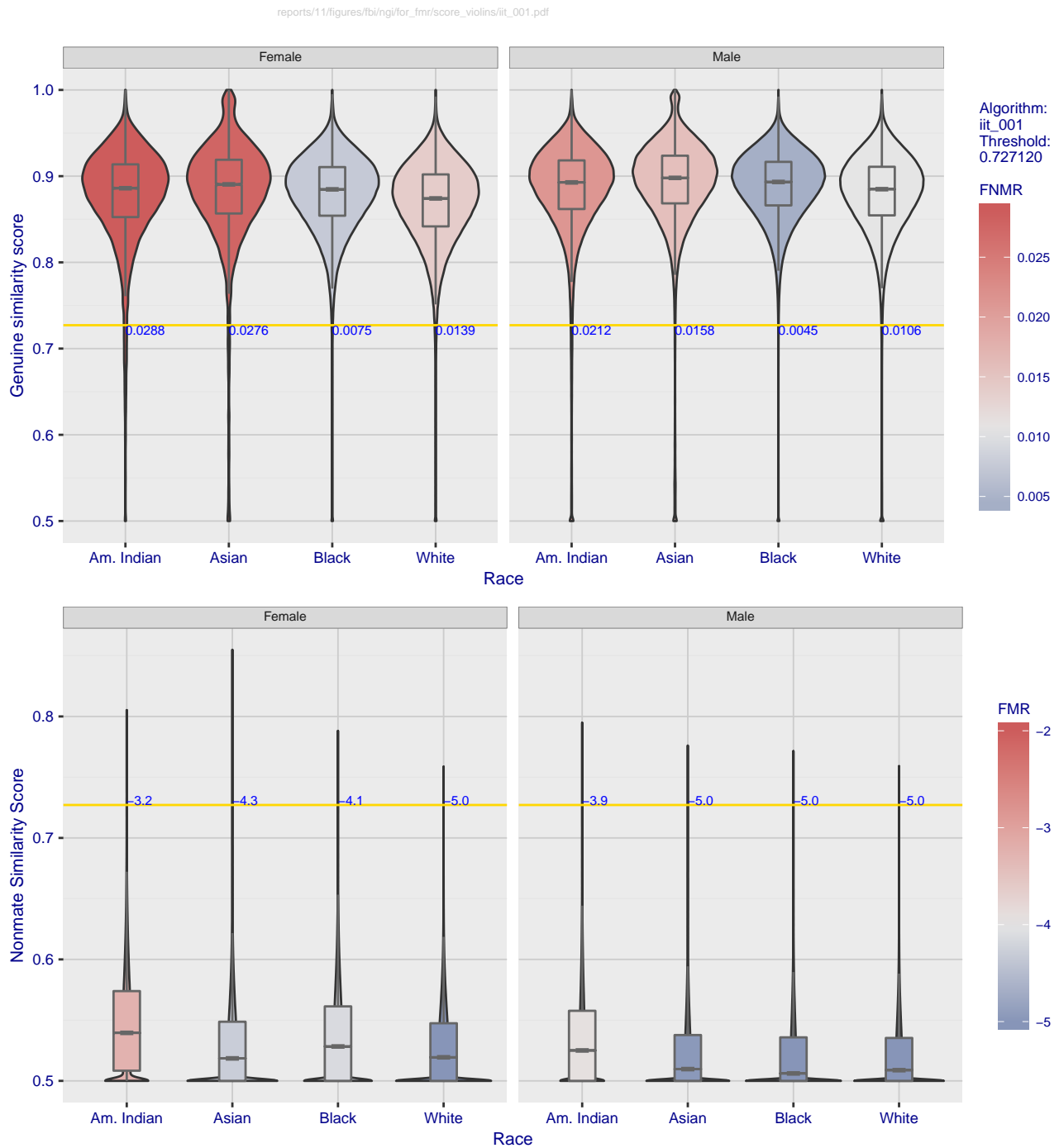


Figure 49: FNMR and FMR score distributions by sex and race, iit-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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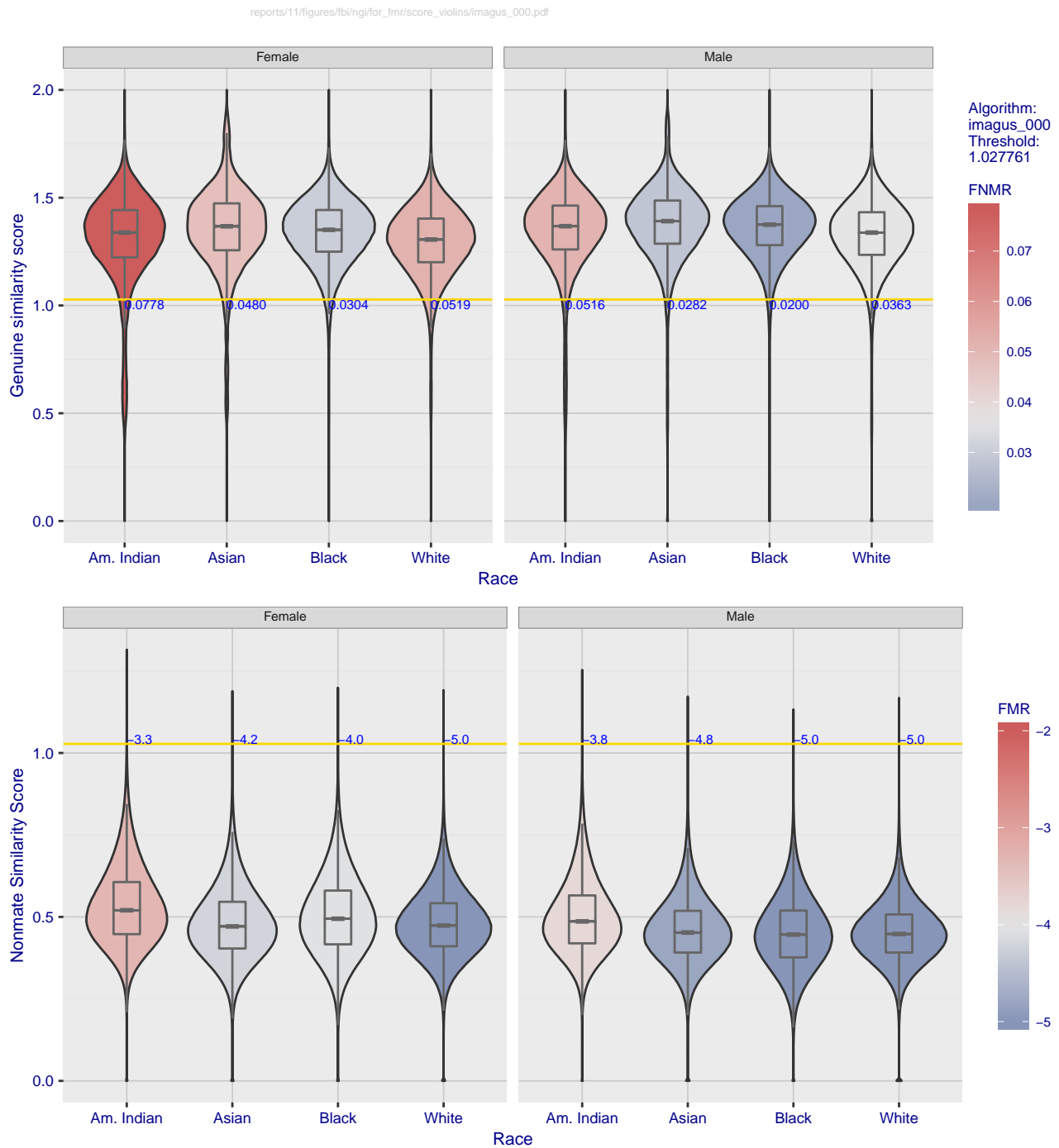


Figure 50: FNMR and FMR score distributions by sex and race, imagus-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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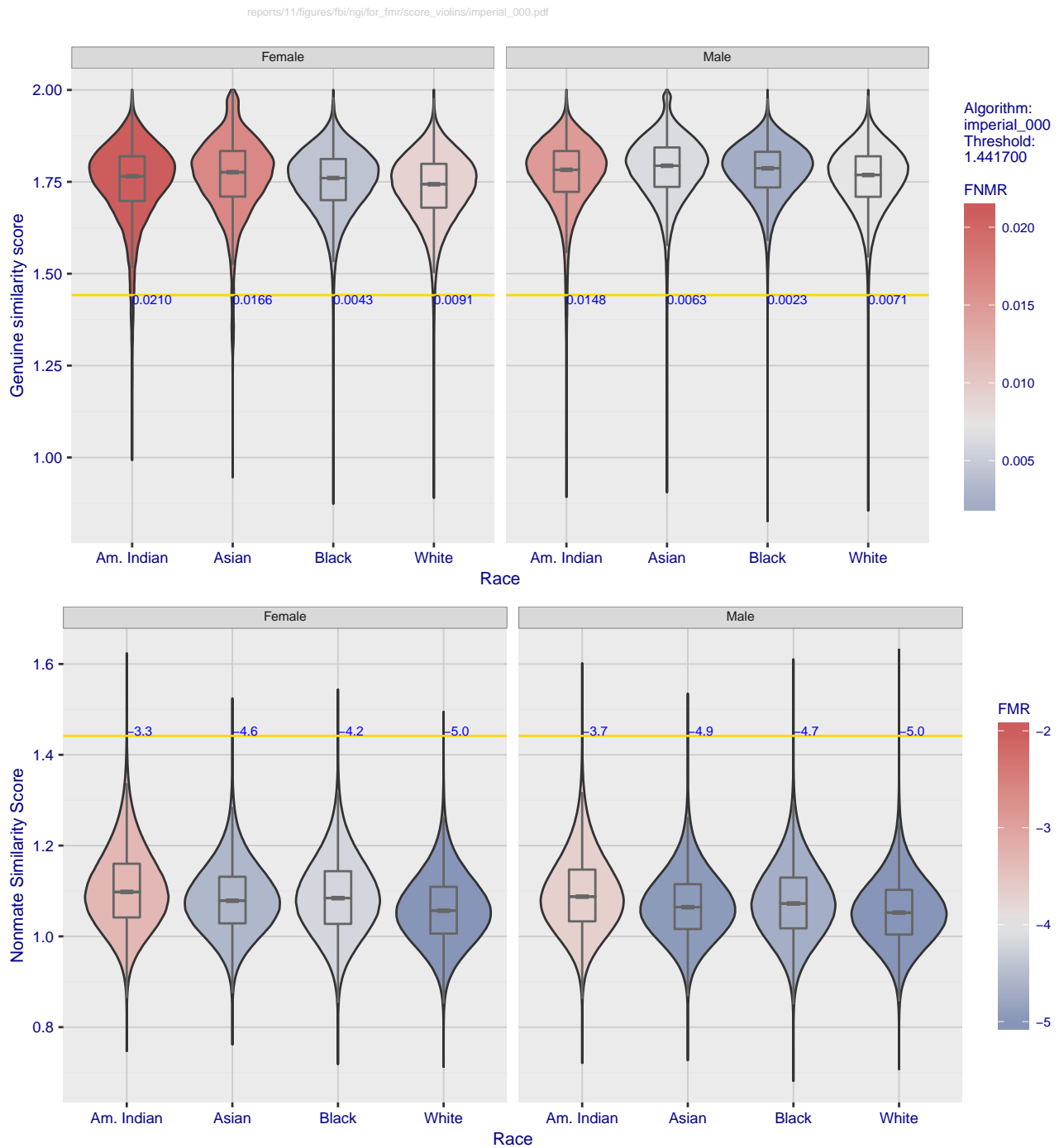


Figure 51: FNMR and FMR score distributions by sex and race, imperial-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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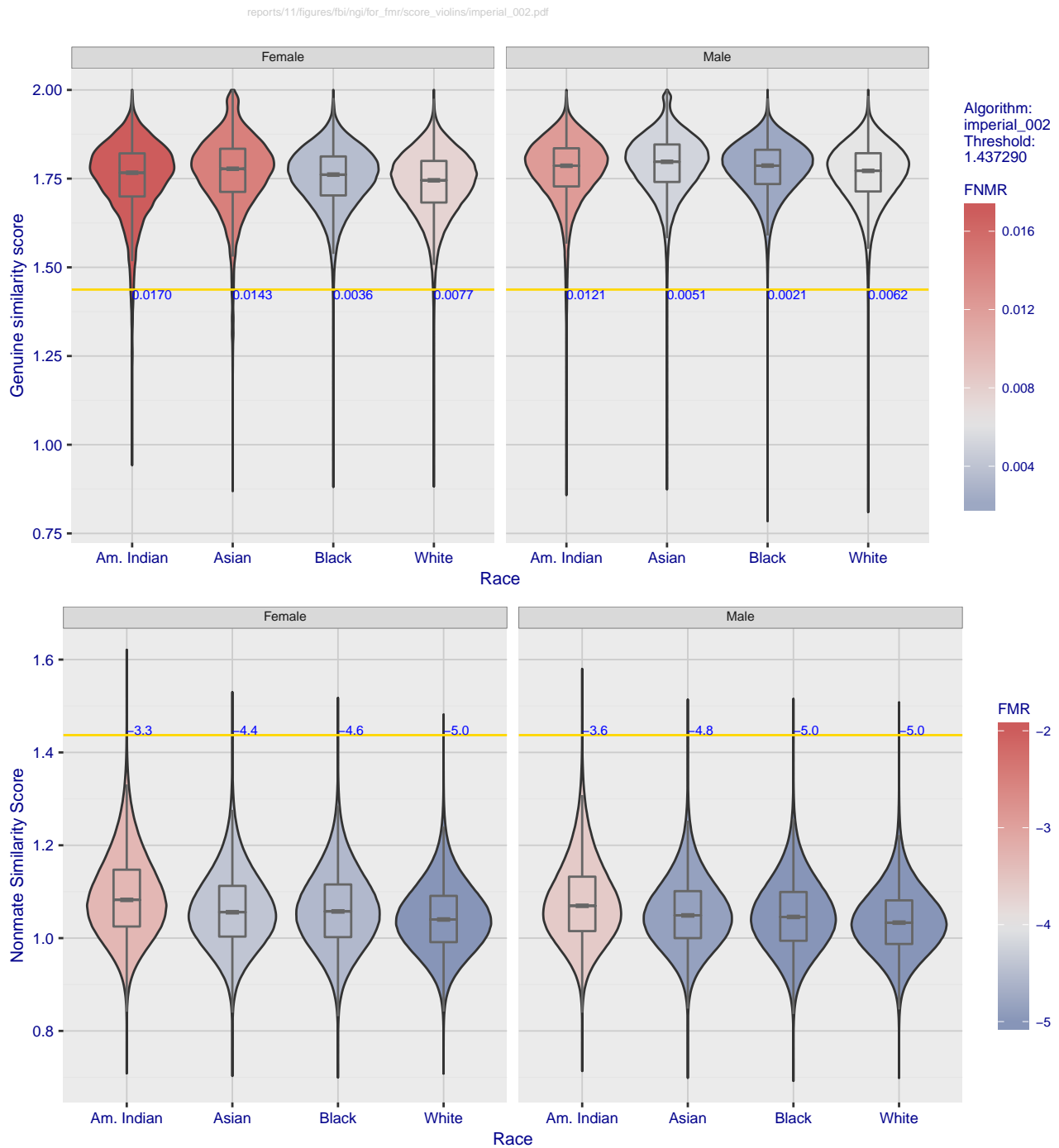


Figure 52: FNMR and FMR score distributions by sex and race, imperial-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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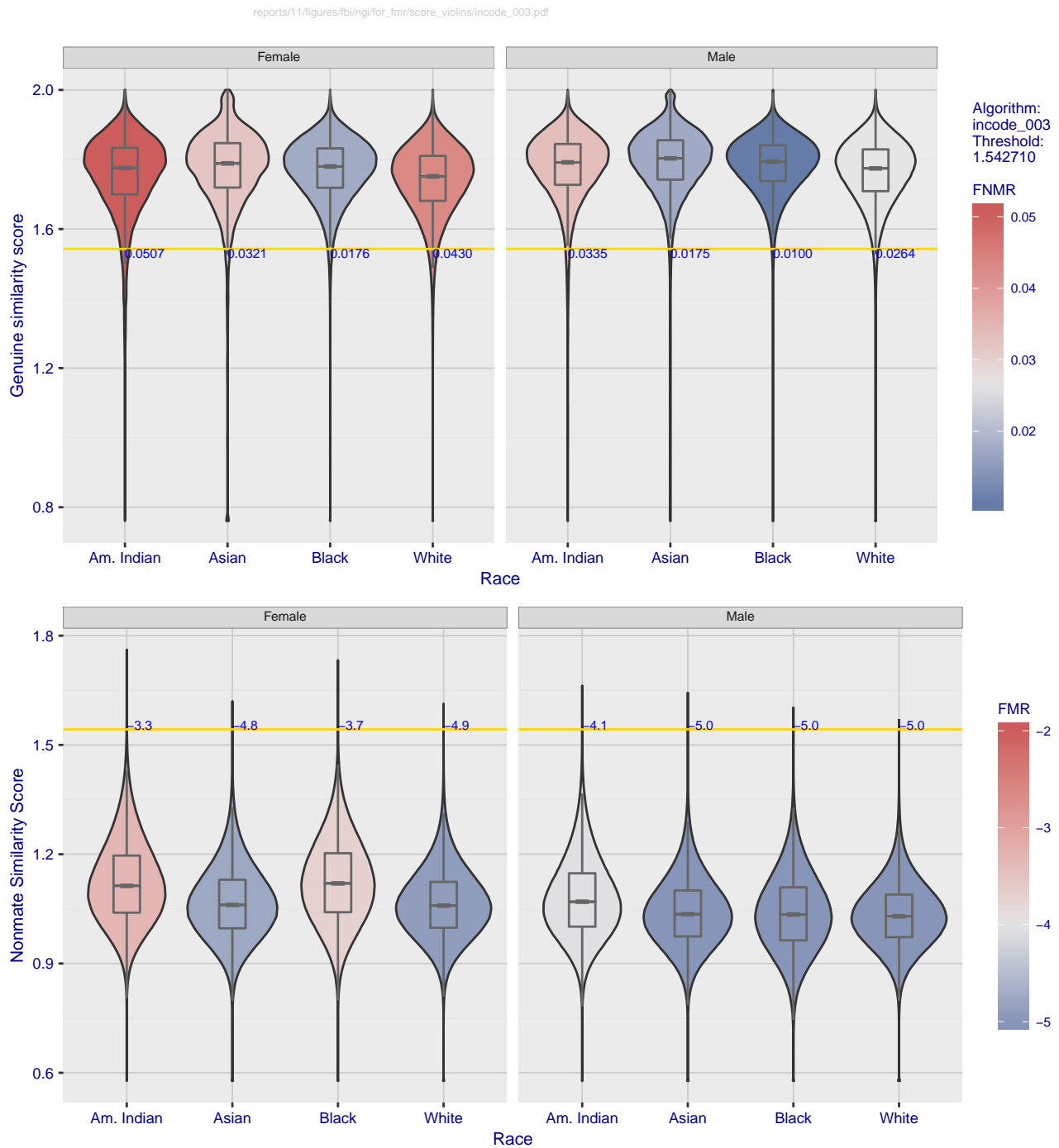


Figure 53: FNMR and FMR score distributions by sex and race, incode-003. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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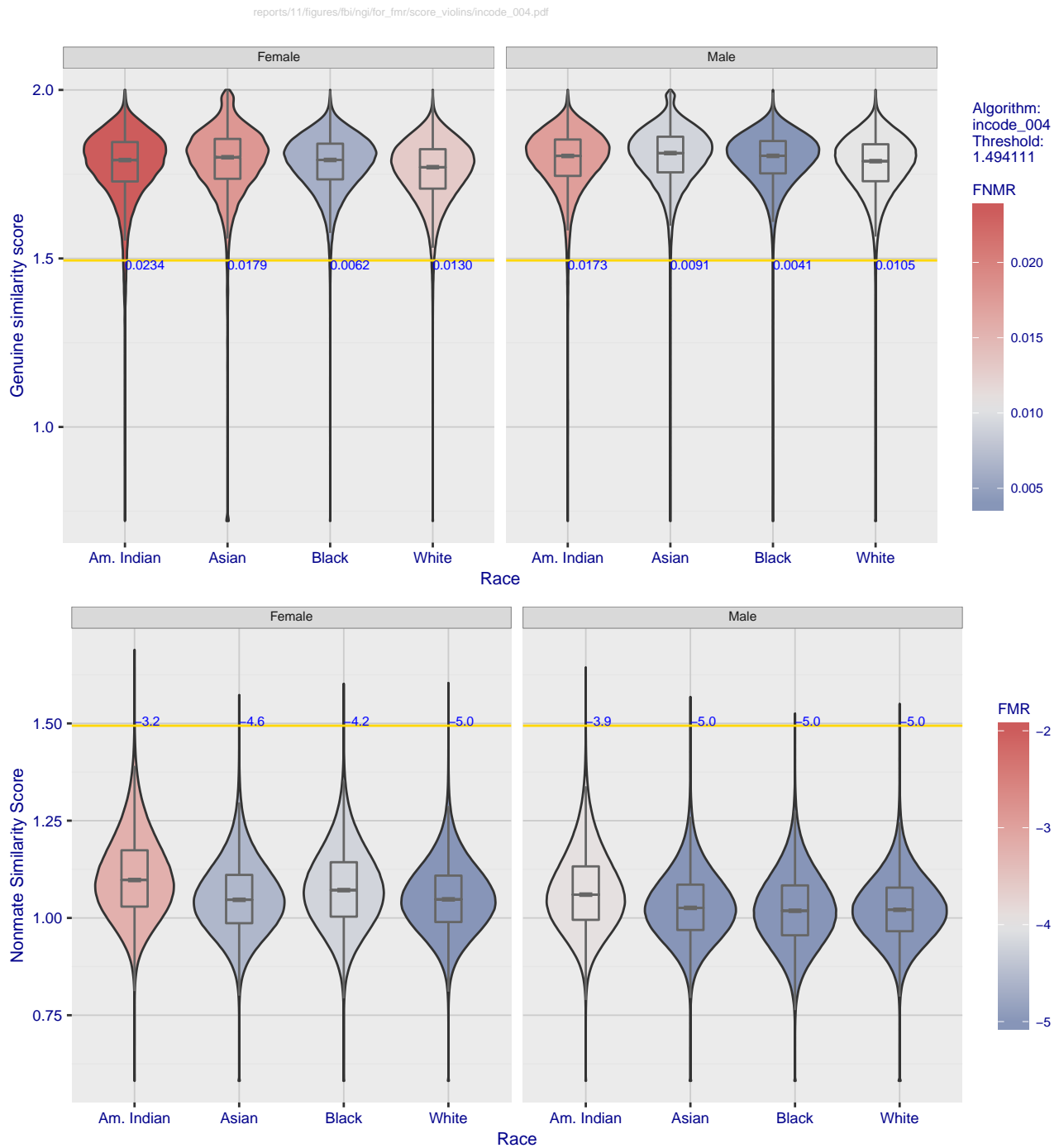


Figure 54: FNMR and FMR score distributions by sex and race, incode-004. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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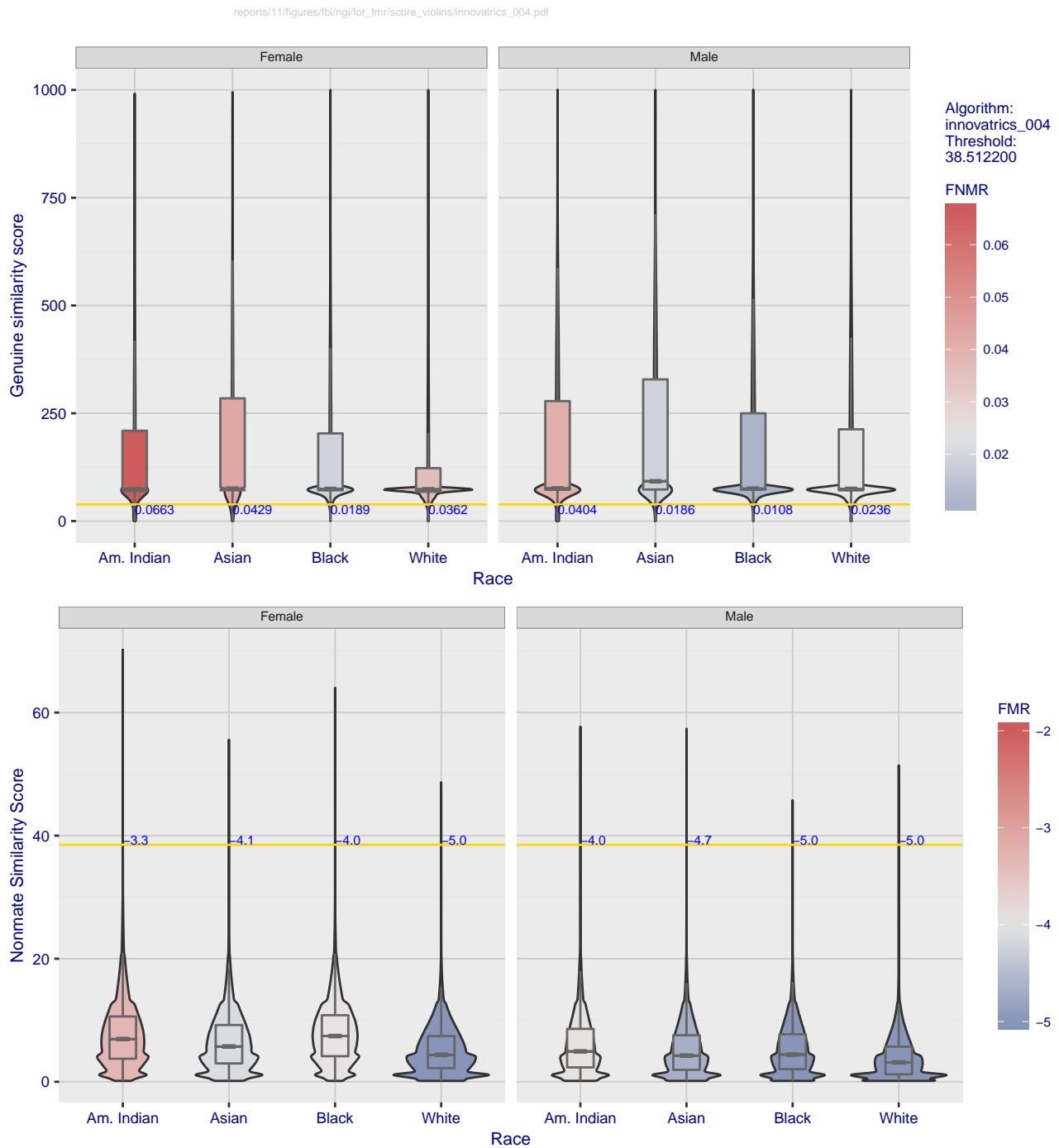


Figure 55: FNMR and FMR score distributions by sex and race, innovatrics-004. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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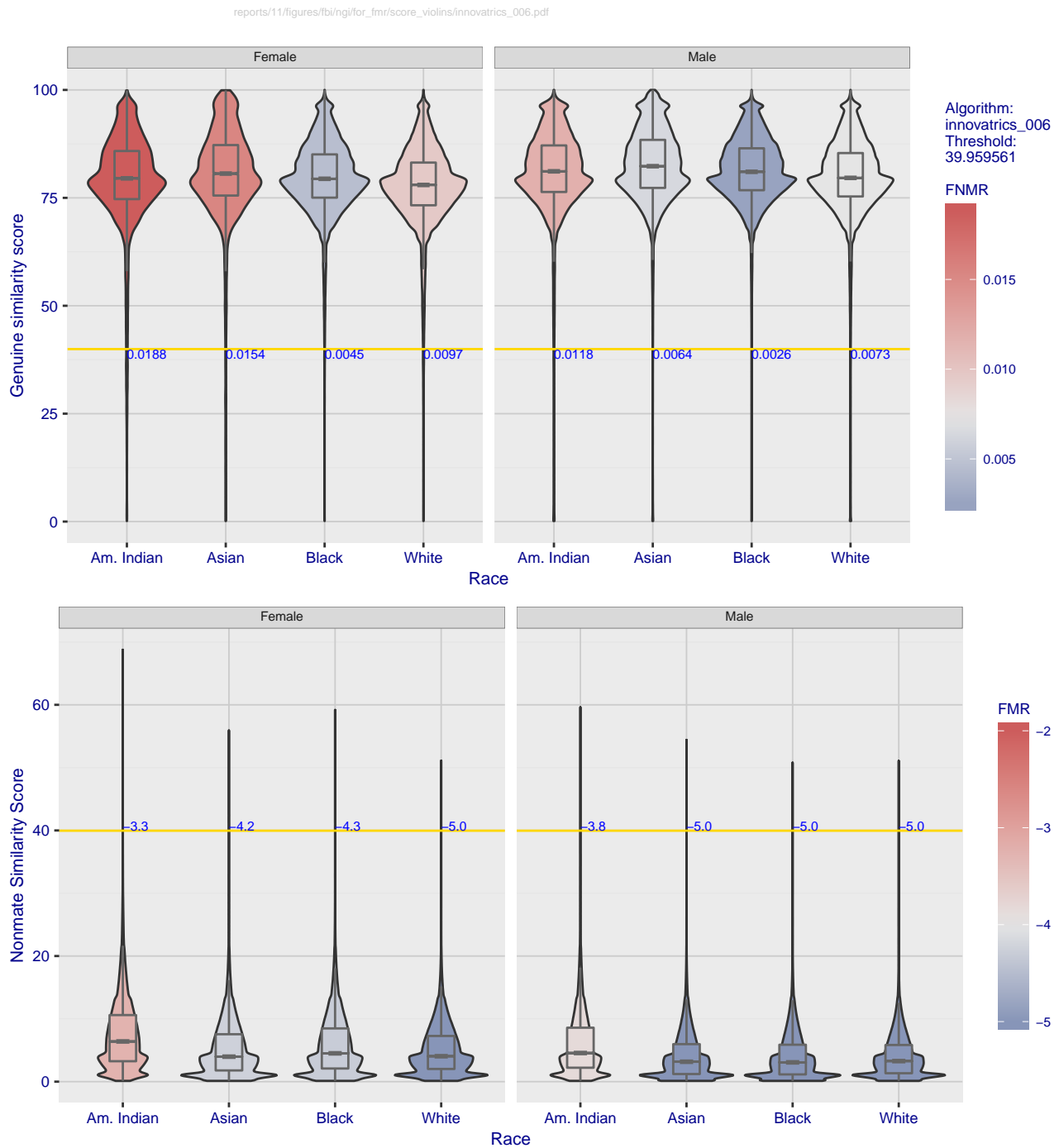


Figure 56: FNMR and FMR score distributions by sex and race, innovatrics-006. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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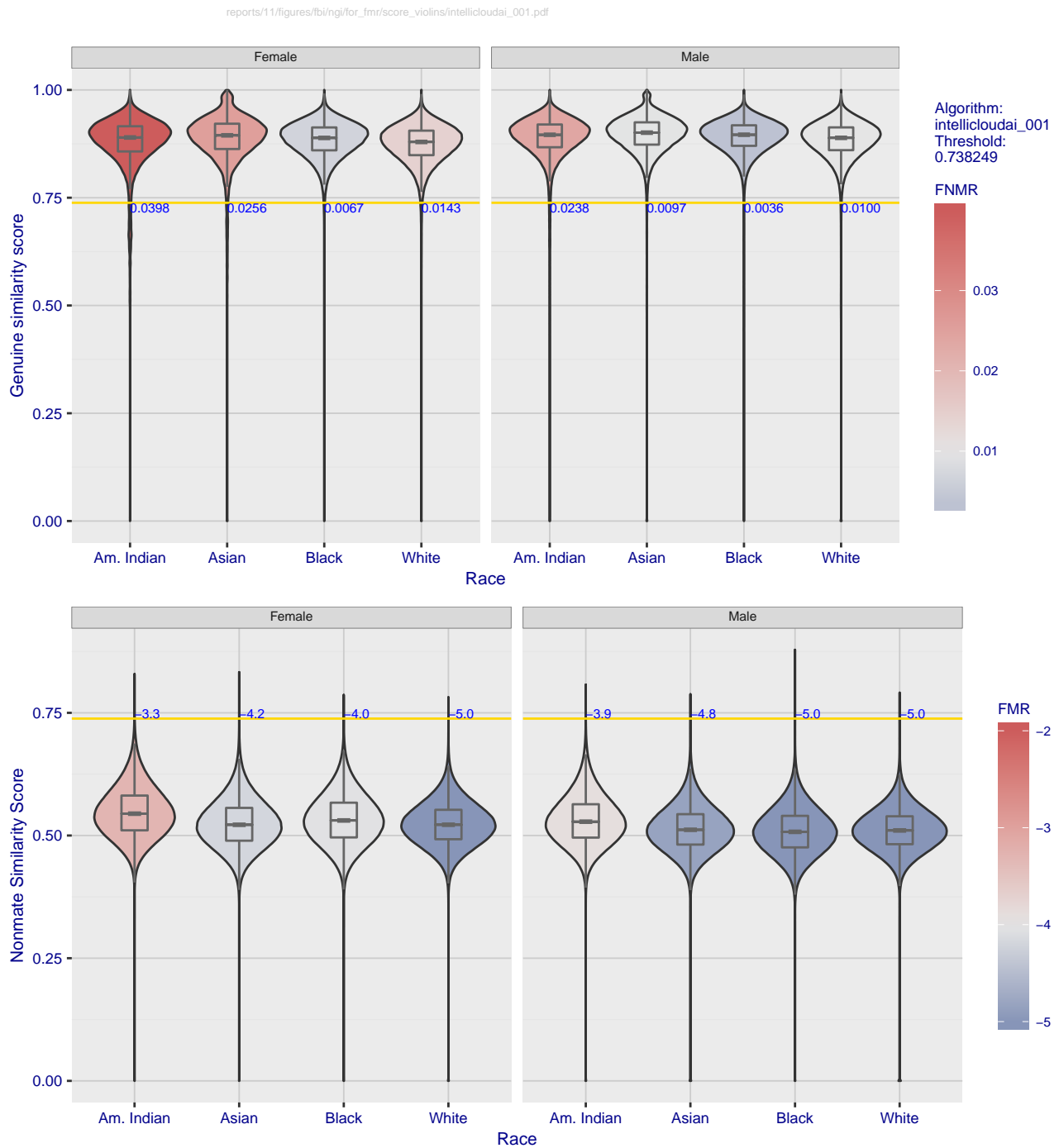


Figure 57: FNMR and FMR score distributions by sex and race, intellicloudai-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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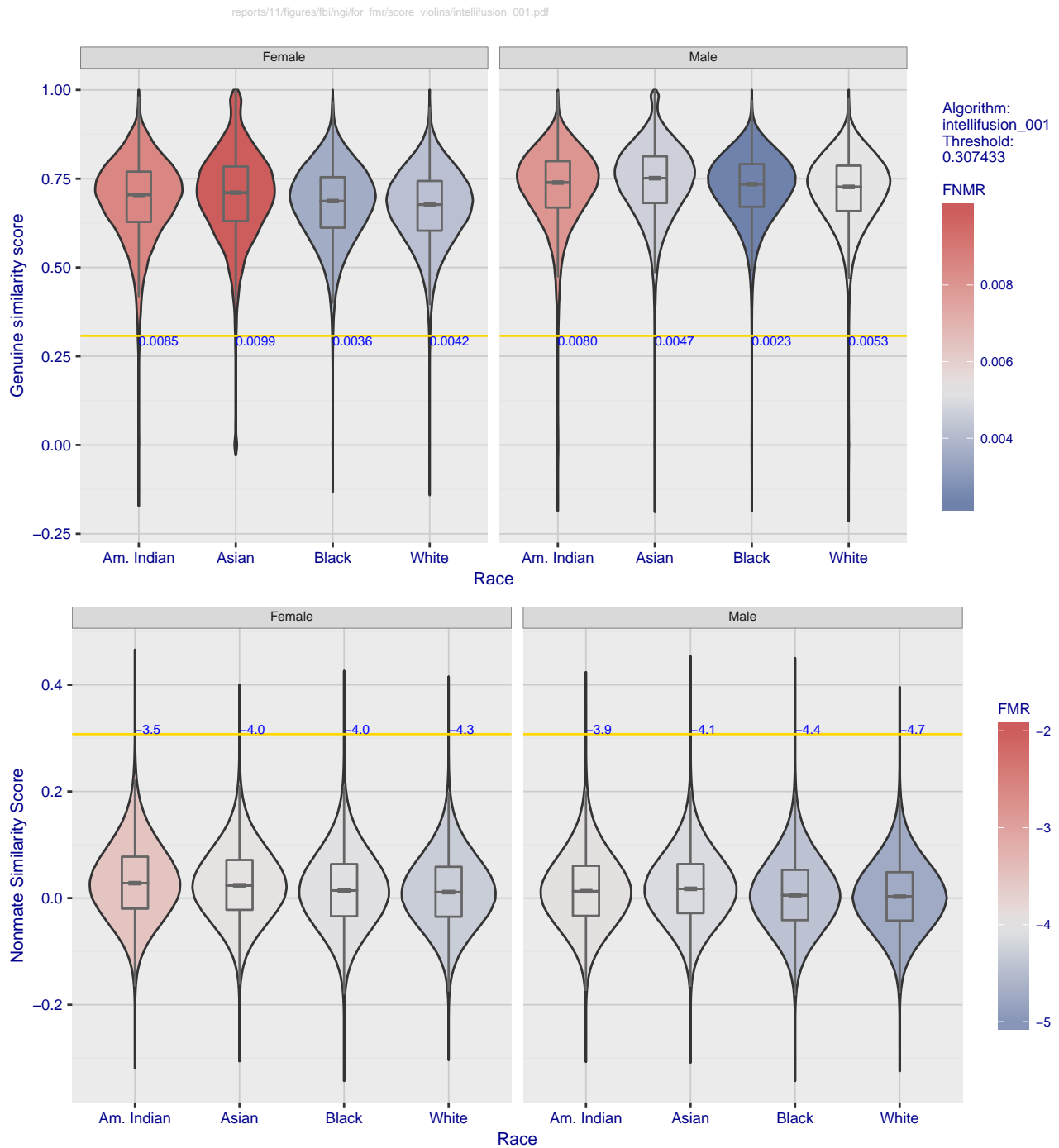


Figure 58: FNMR and FMR score distributions by sex and race, intellifusion-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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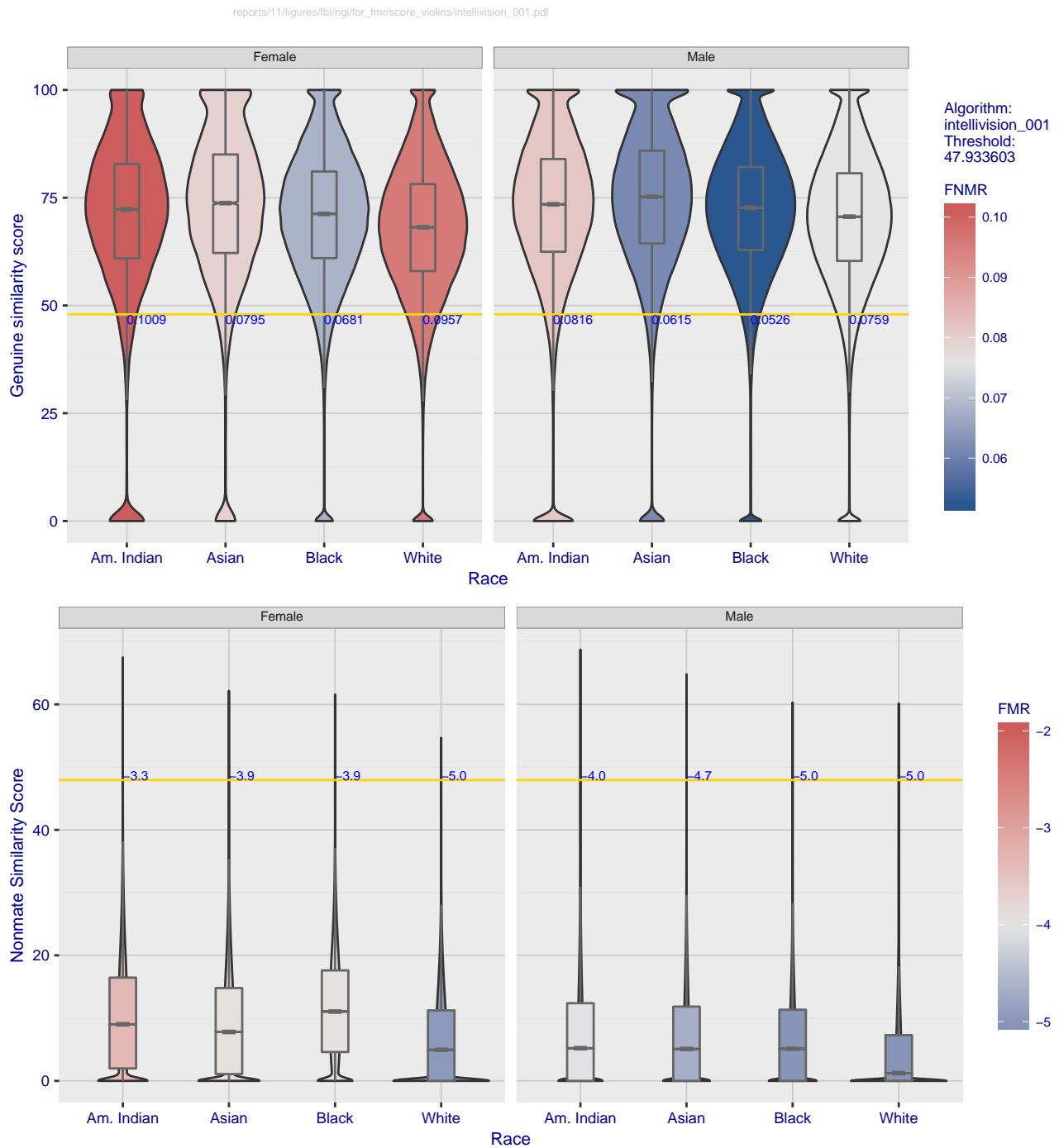


Figure 59: FNMR and FMR score distributions by sex and race, intellivision-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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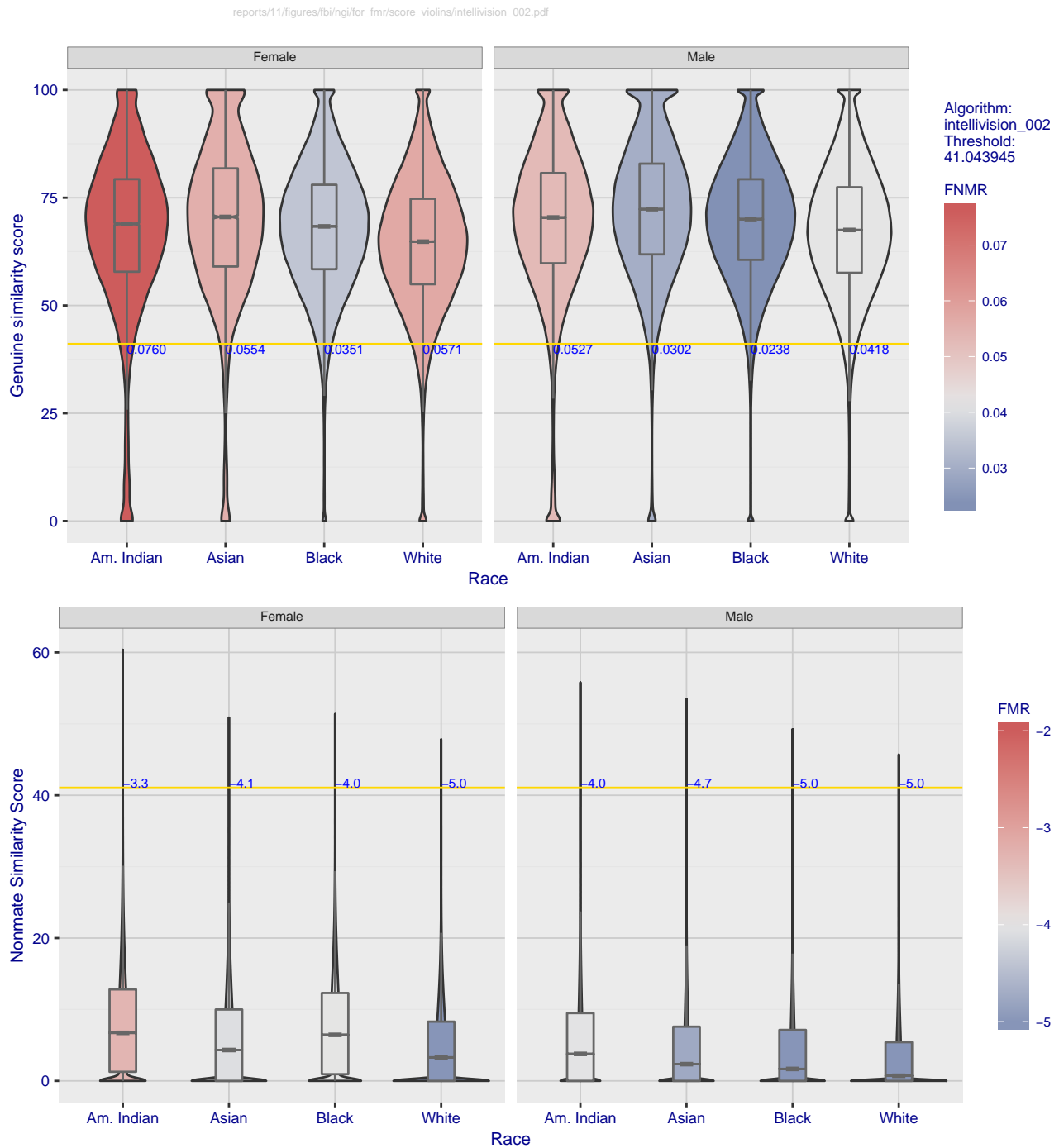


Figure 60: FNMR and FMR score distributions by sex and race, intellivision-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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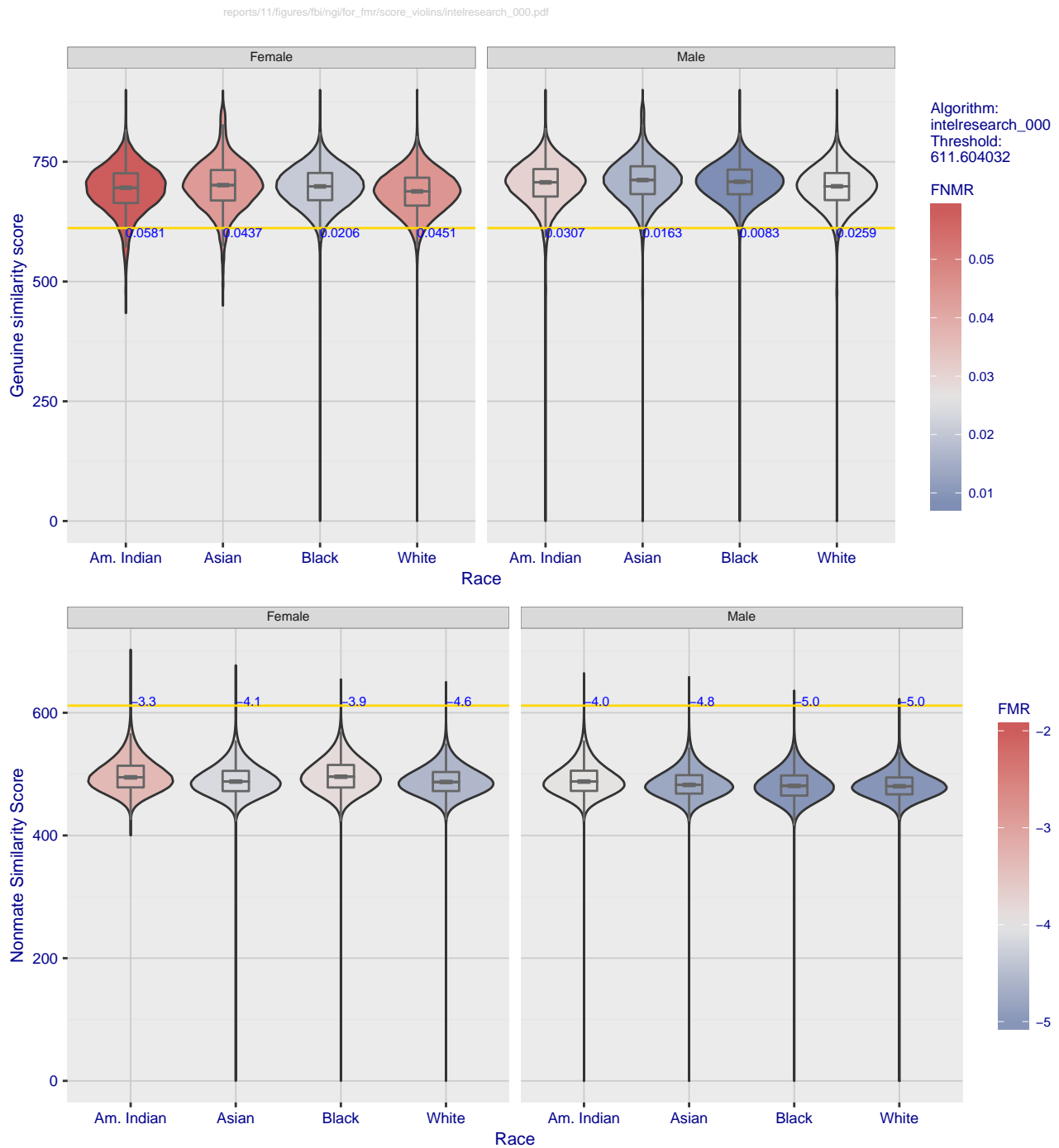


Figure 61: FNMR and FMR score distributions by sex and race, intelresearch-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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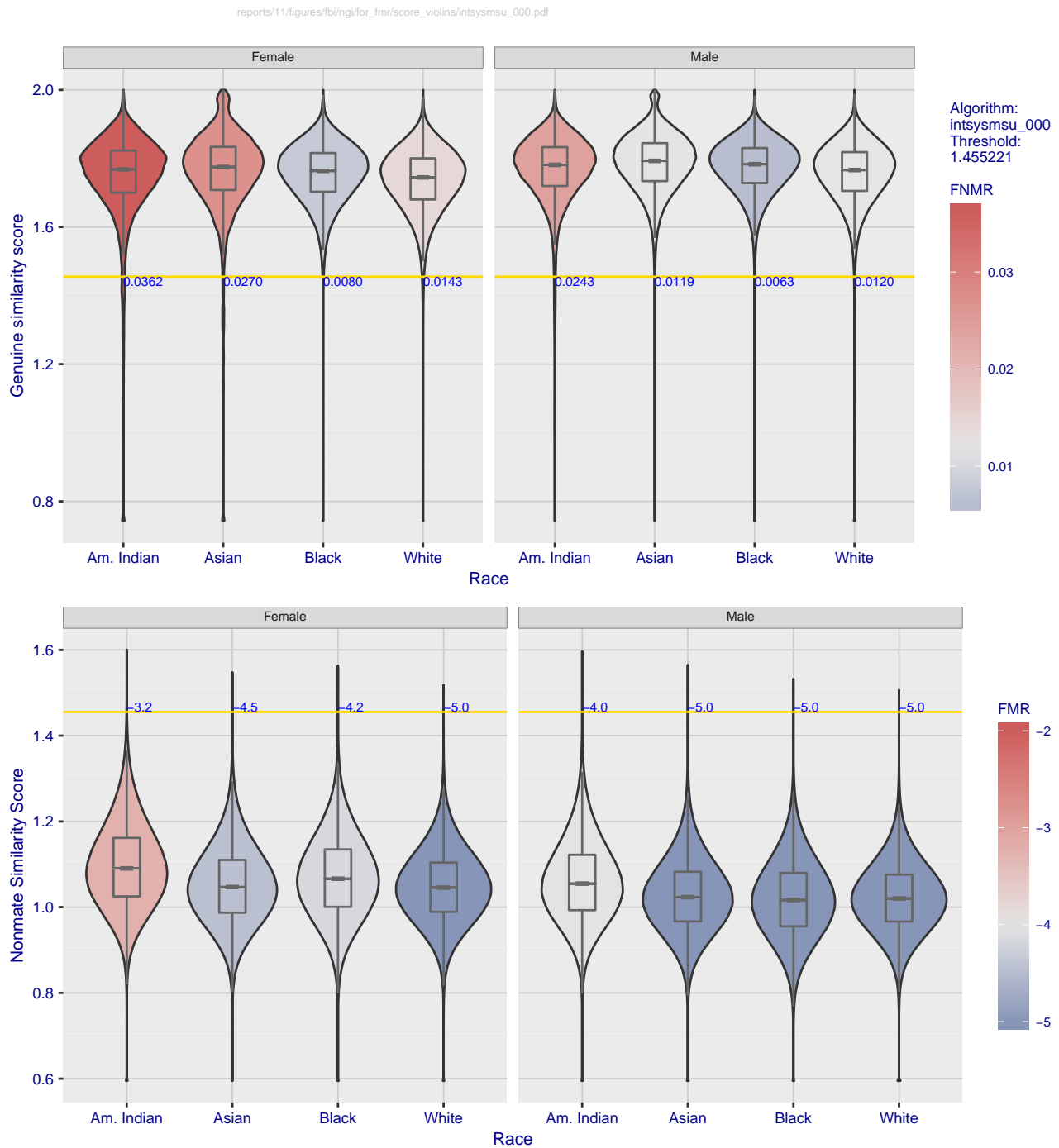


Figure 62: FNMR and FMR score distributions by sex and race, intsysmsu-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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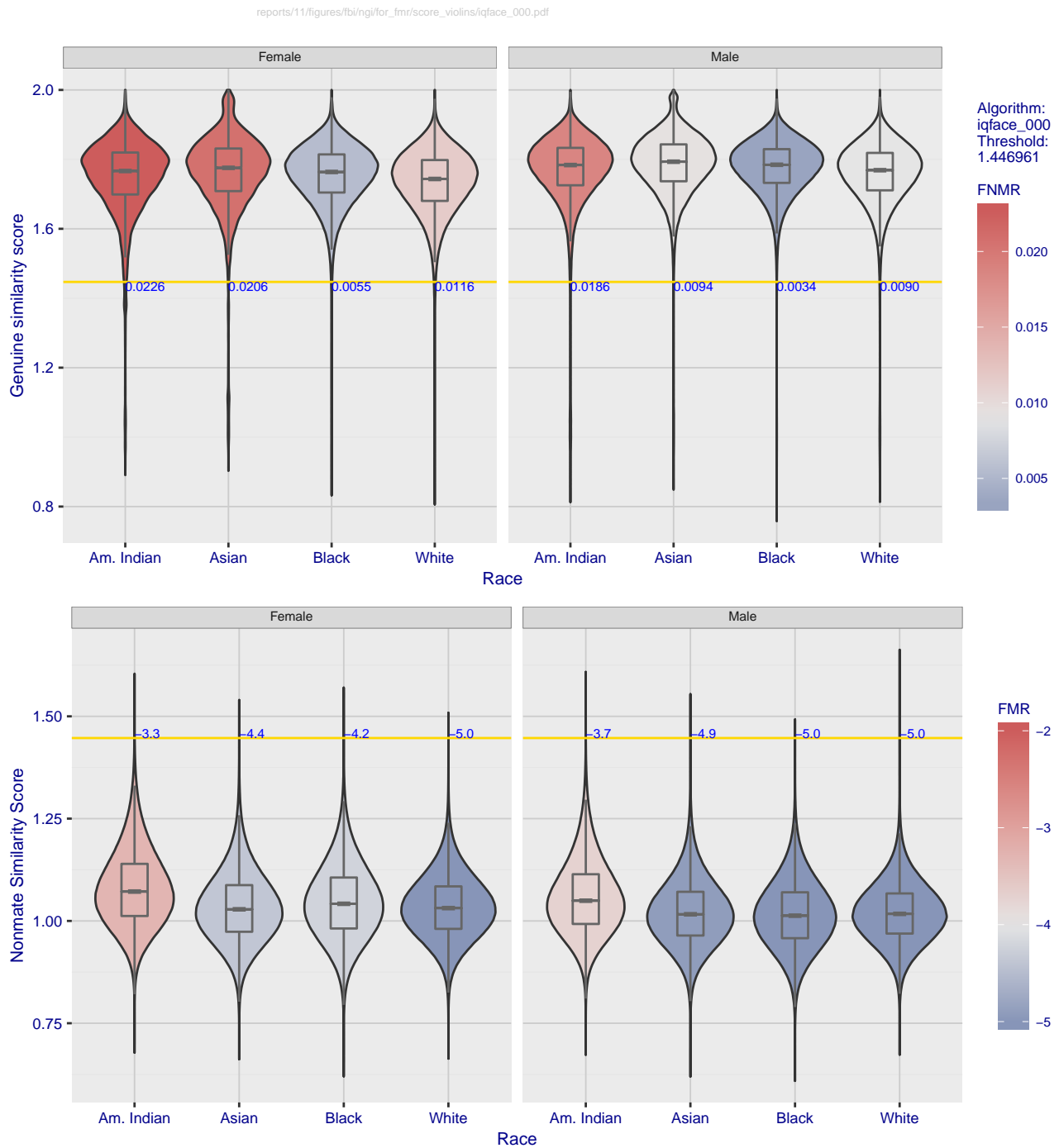


Figure 63: FNMR and FMR score distributions by sex and race, iface-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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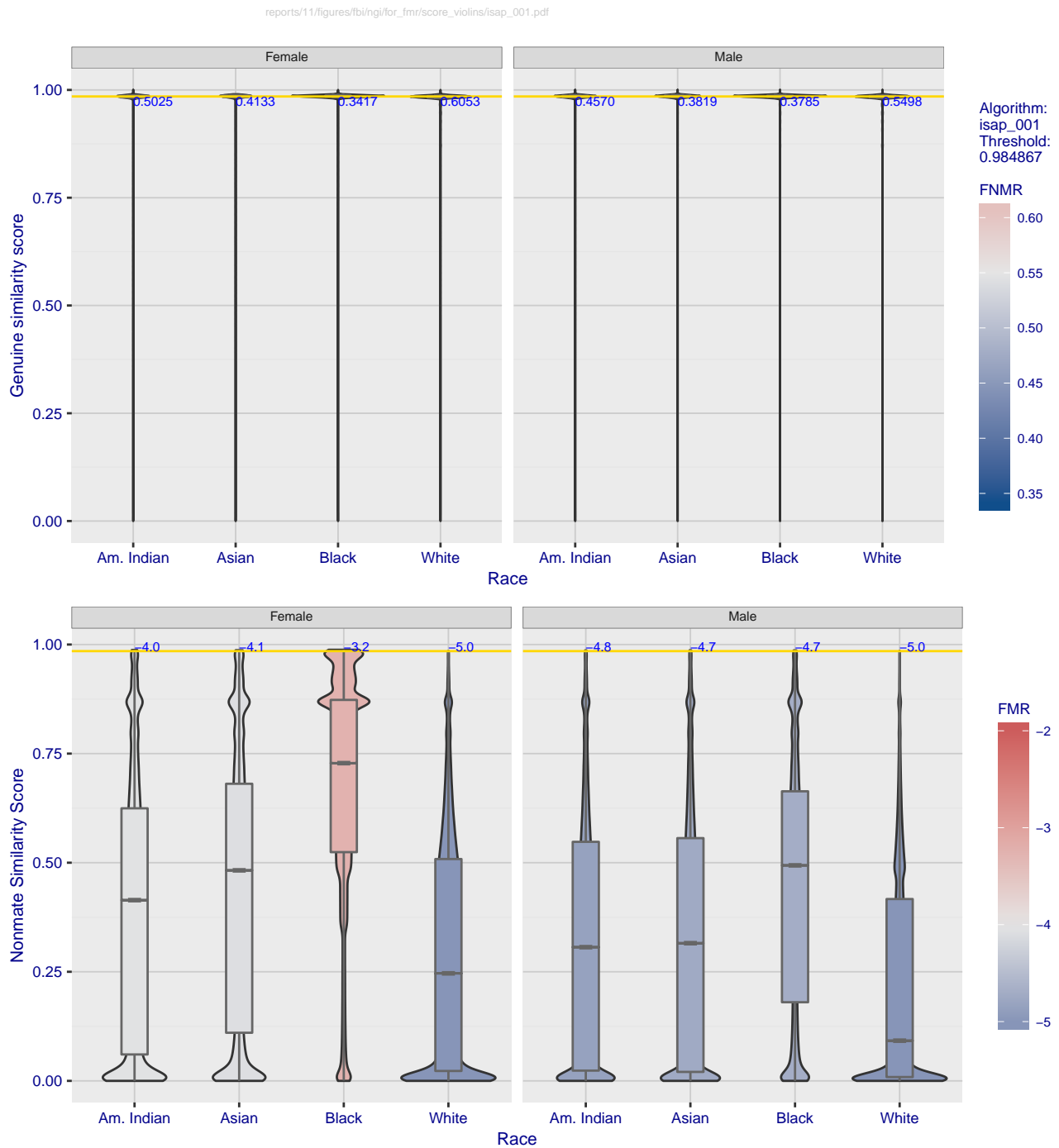


Figure 64: FNMR and FMR score distributions by sex and race, isap-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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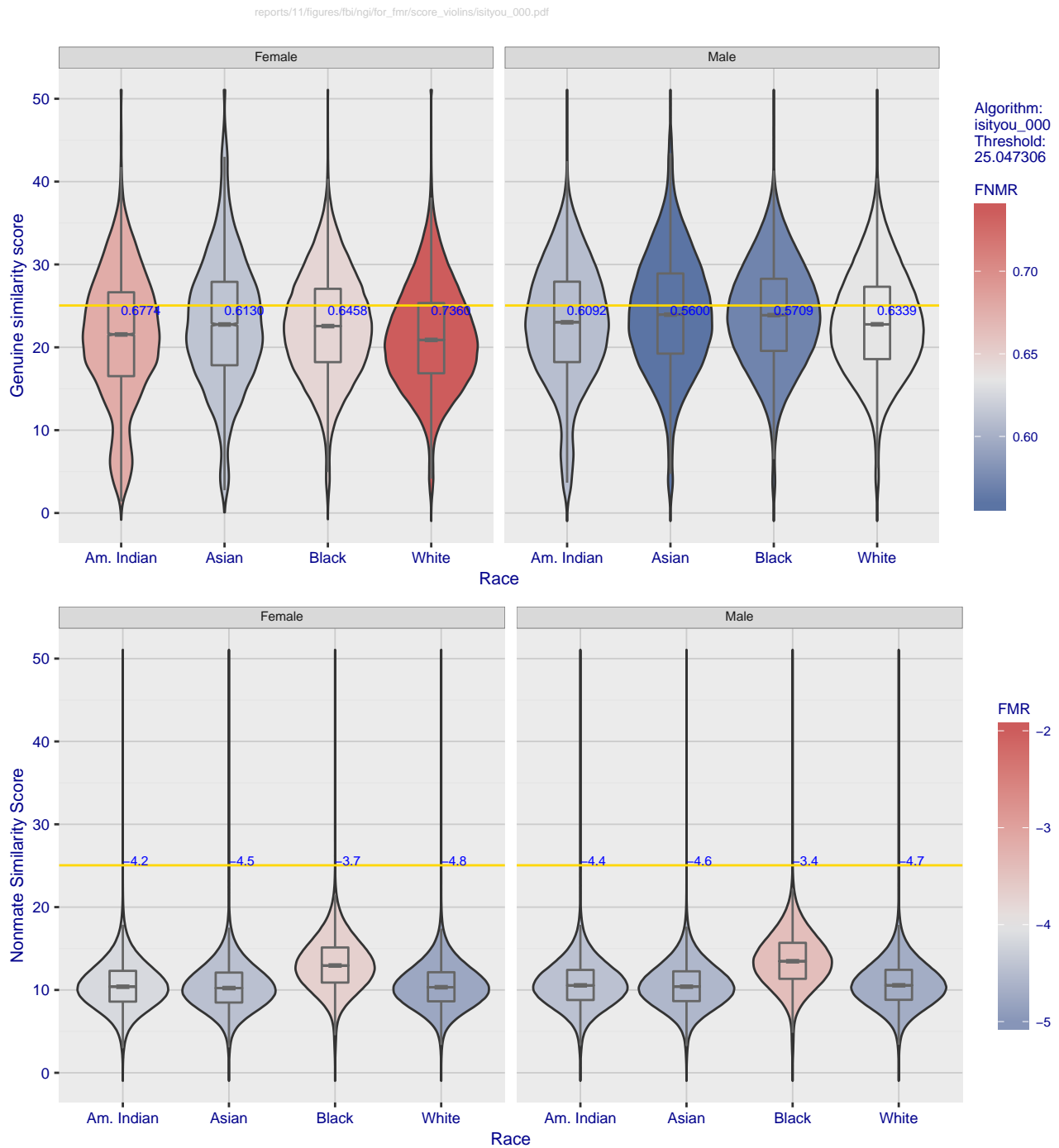


Figure 65: FNMR and FMR score distributions by sex and race, isityou-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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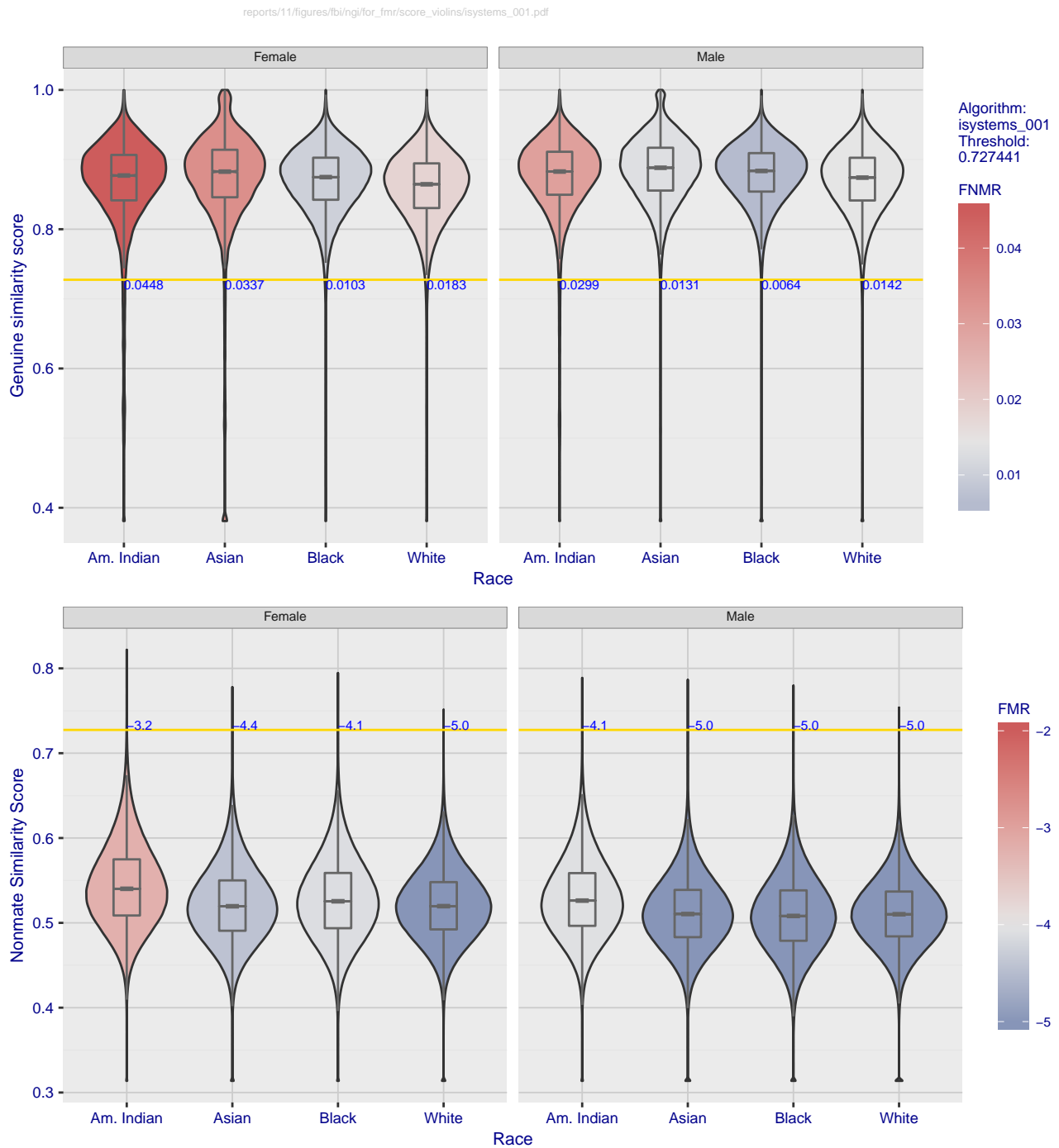


Figure 66: FNMR and FMR score distributions by sex and race, systems-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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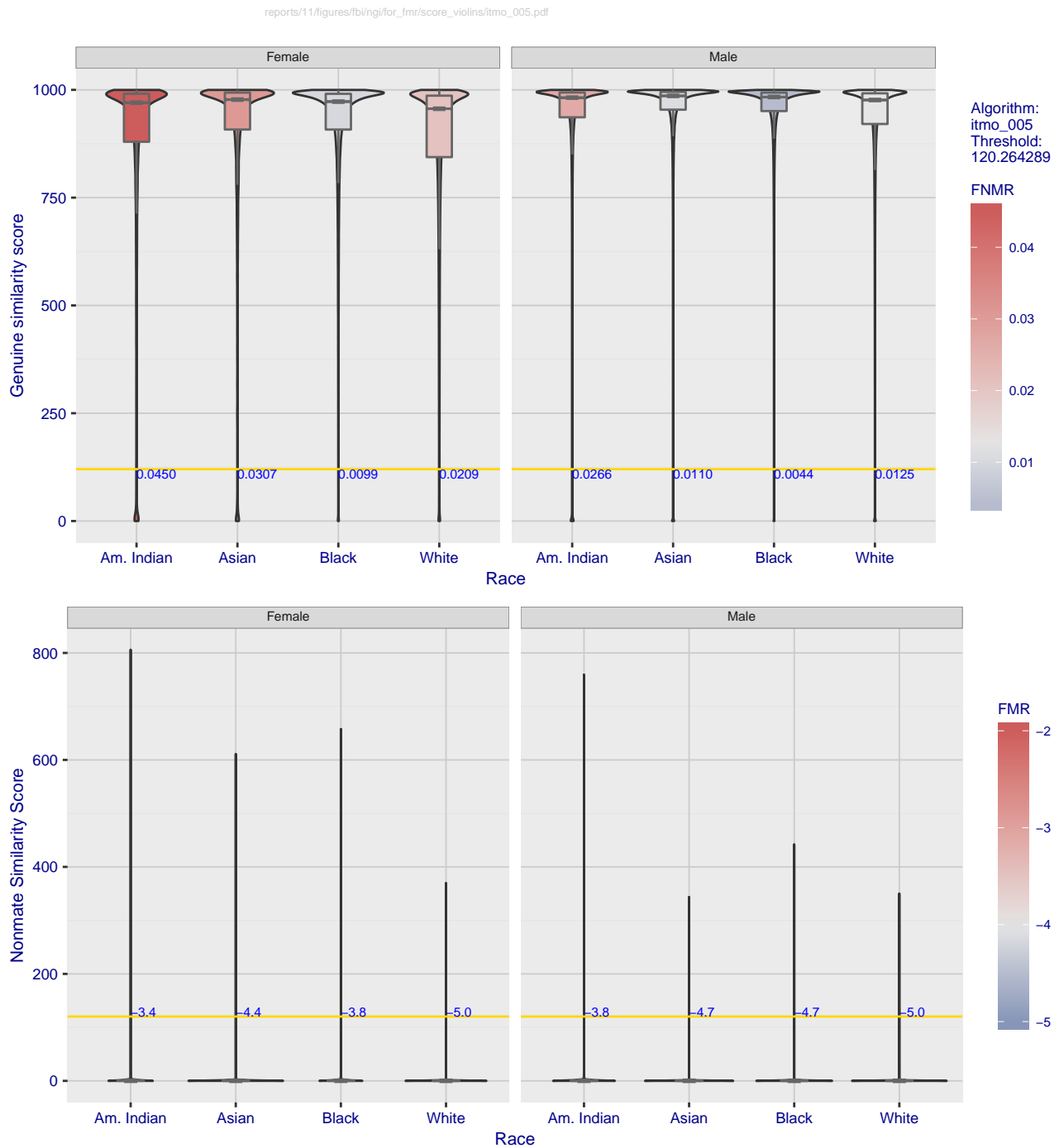


Figure 67: FNMR and FMR score distributions by sex and race, itmo-005. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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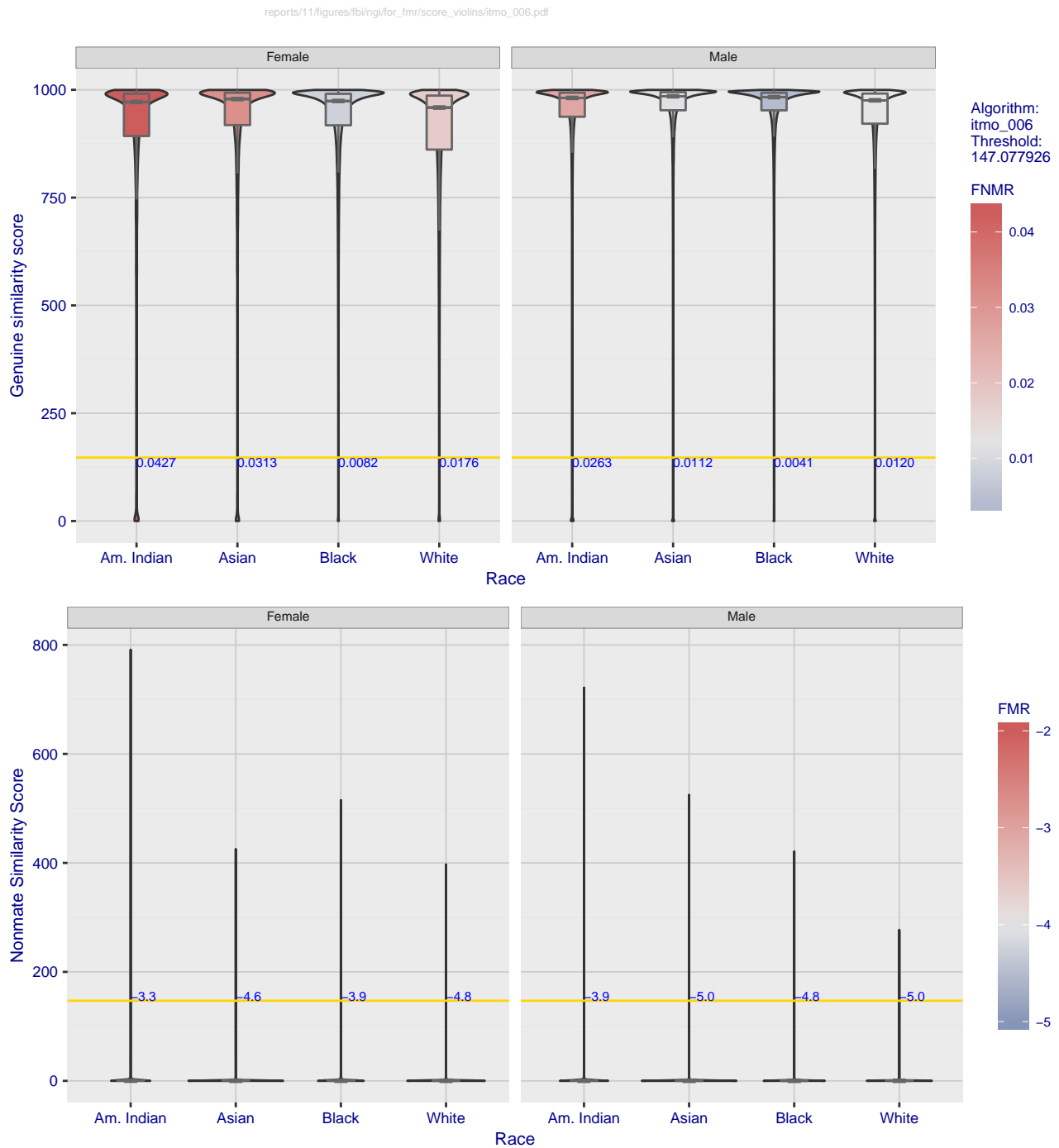


Figure 68: FNMR and FMR score distributions by sex and race, itmo-006. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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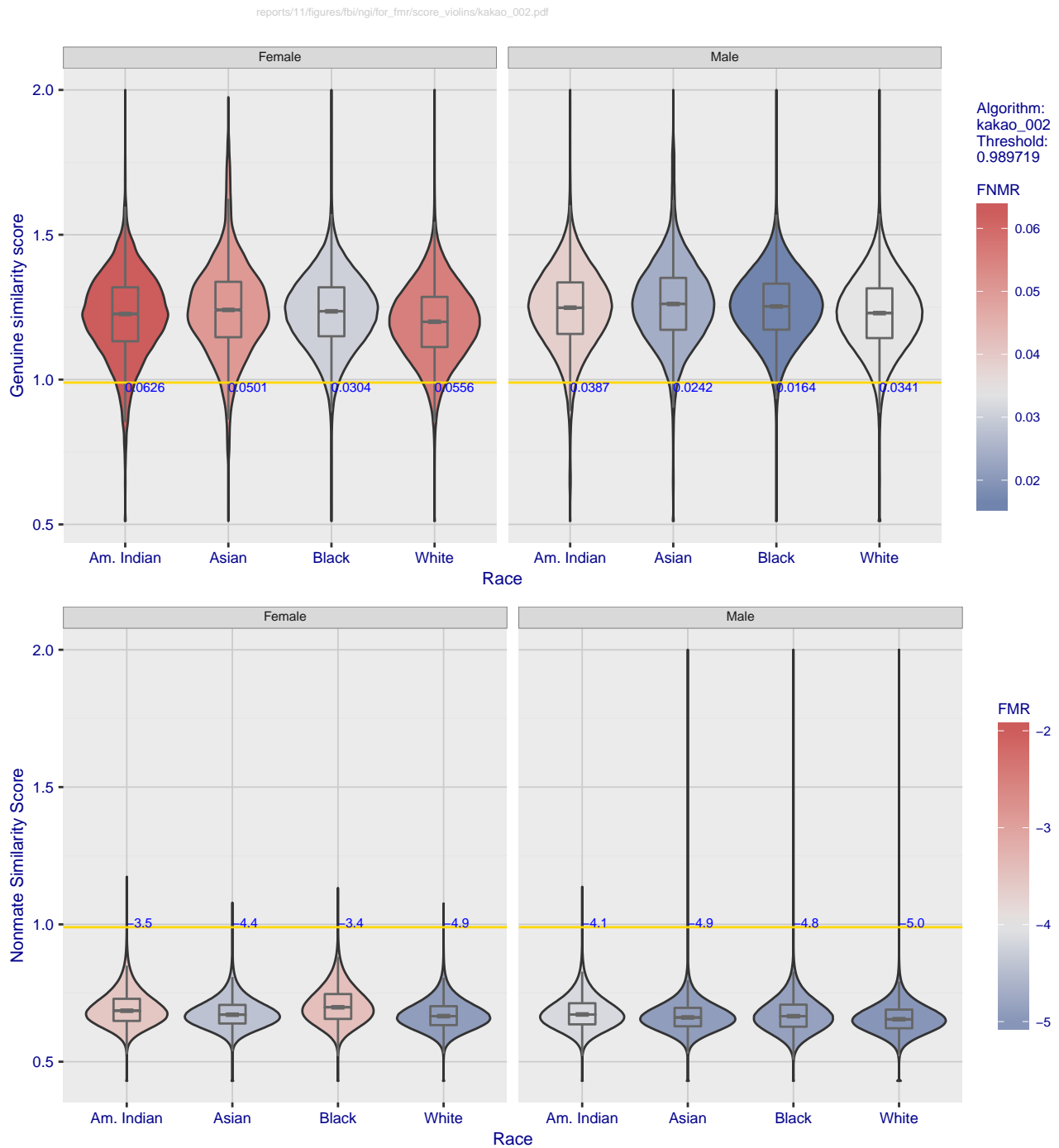


Figure 69: FNMR and FMR score distributions by sex and race, kakao-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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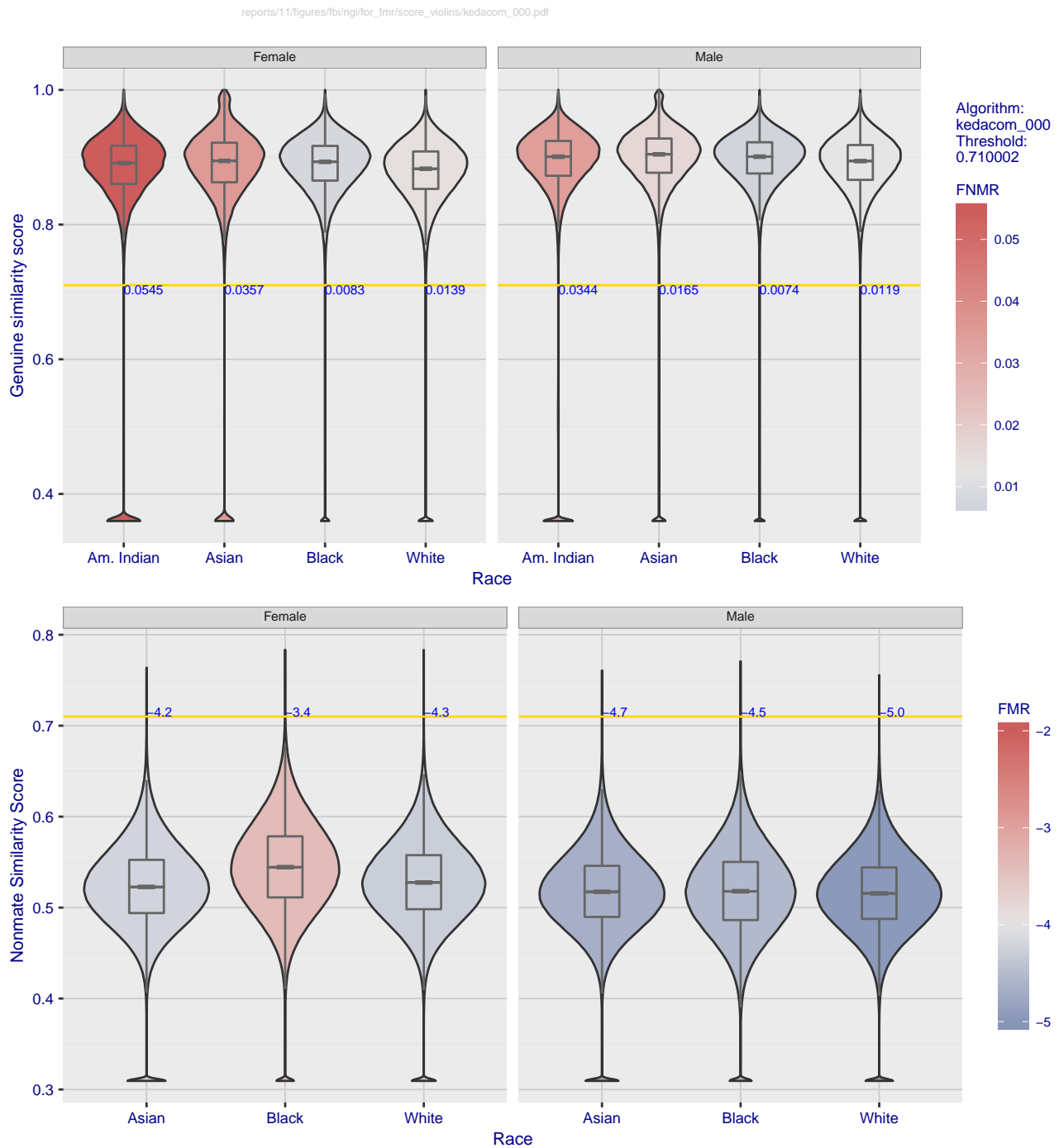


Figure 70: FNMR and FMR score distributions by sex and race, kedacom-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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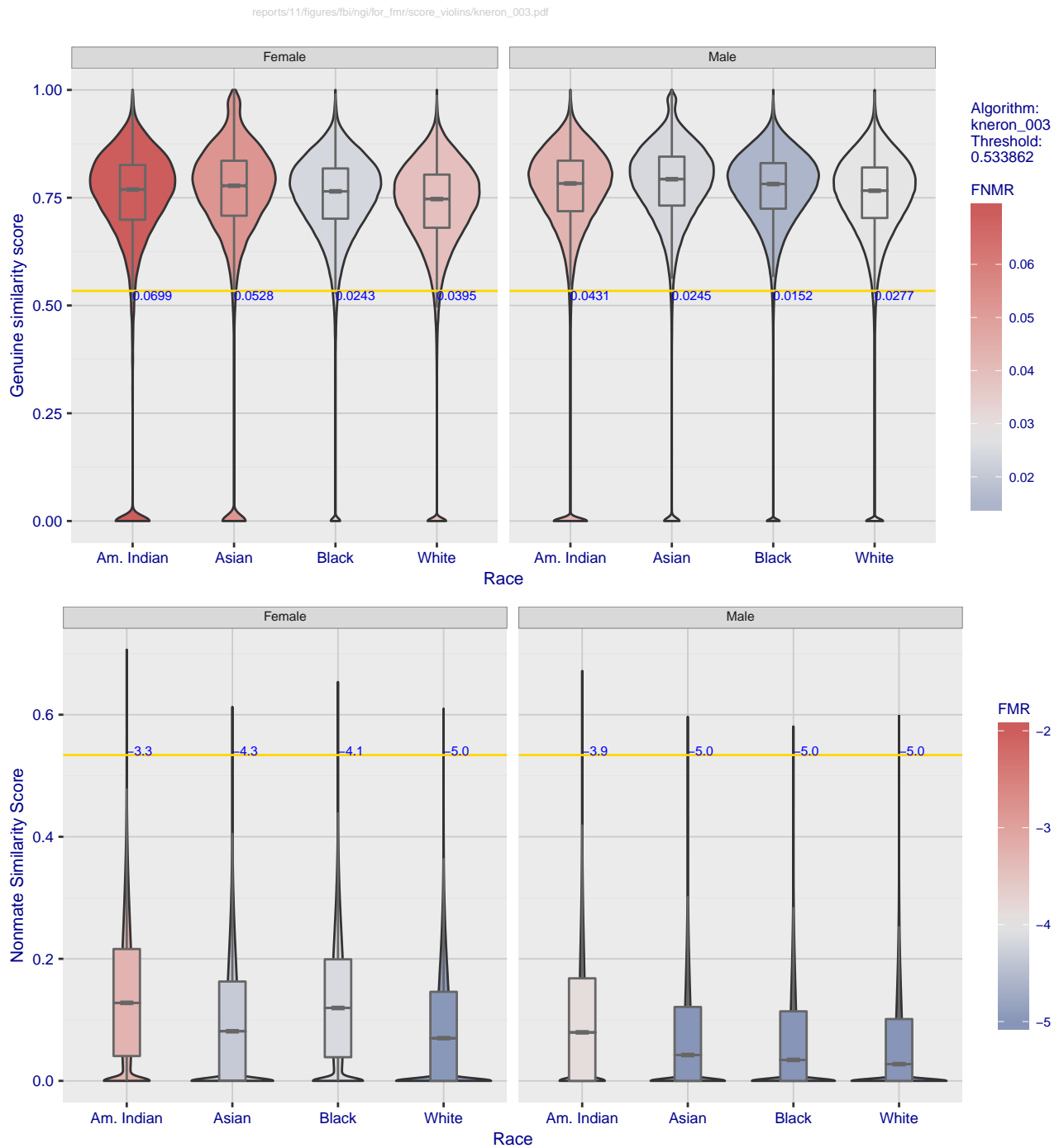


Figure 71: FNMR and FMR score distributions by sex and race, kneron-003. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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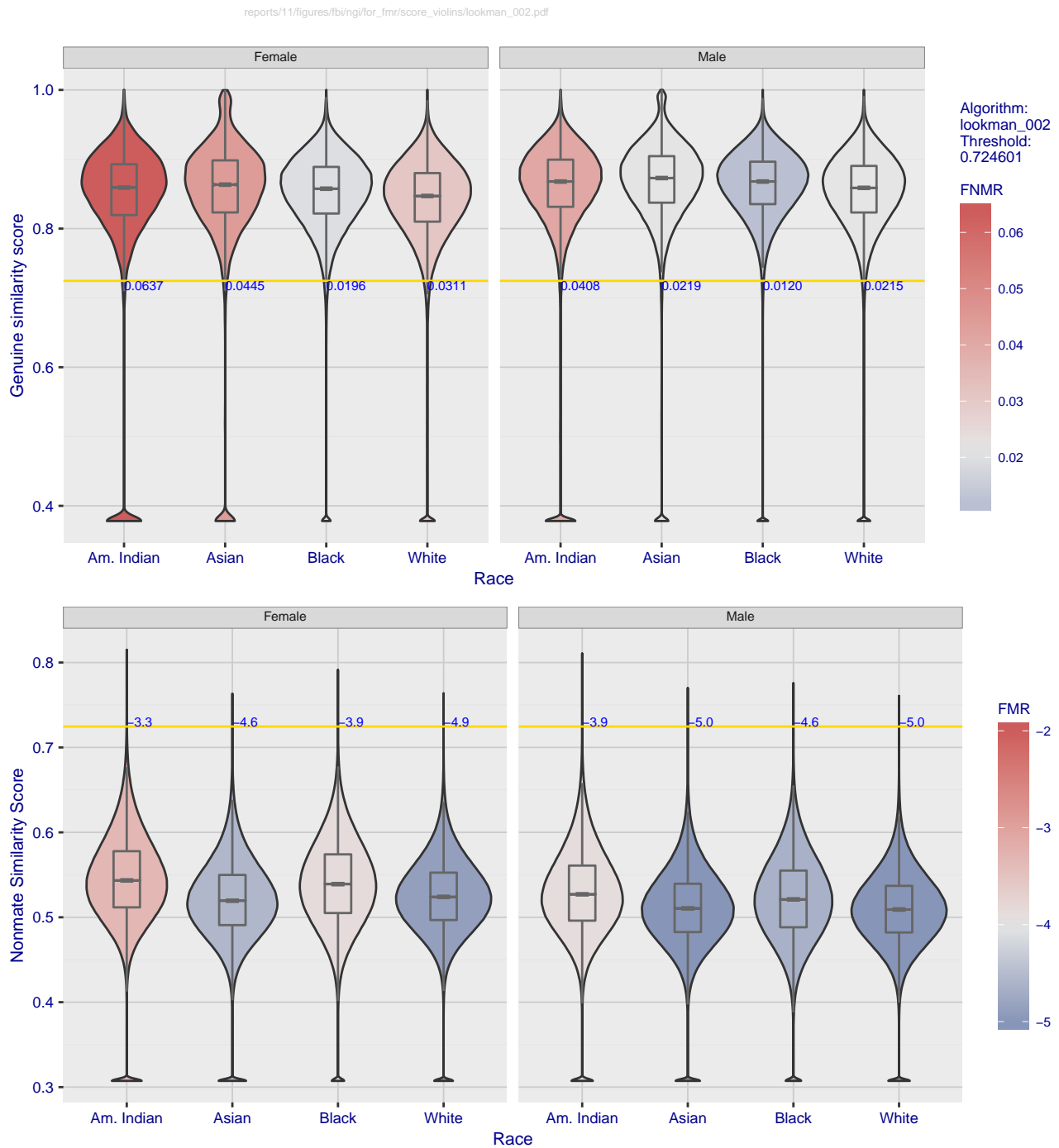


Figure 72: FNMR and FMR score distributions by sex and race, lookman-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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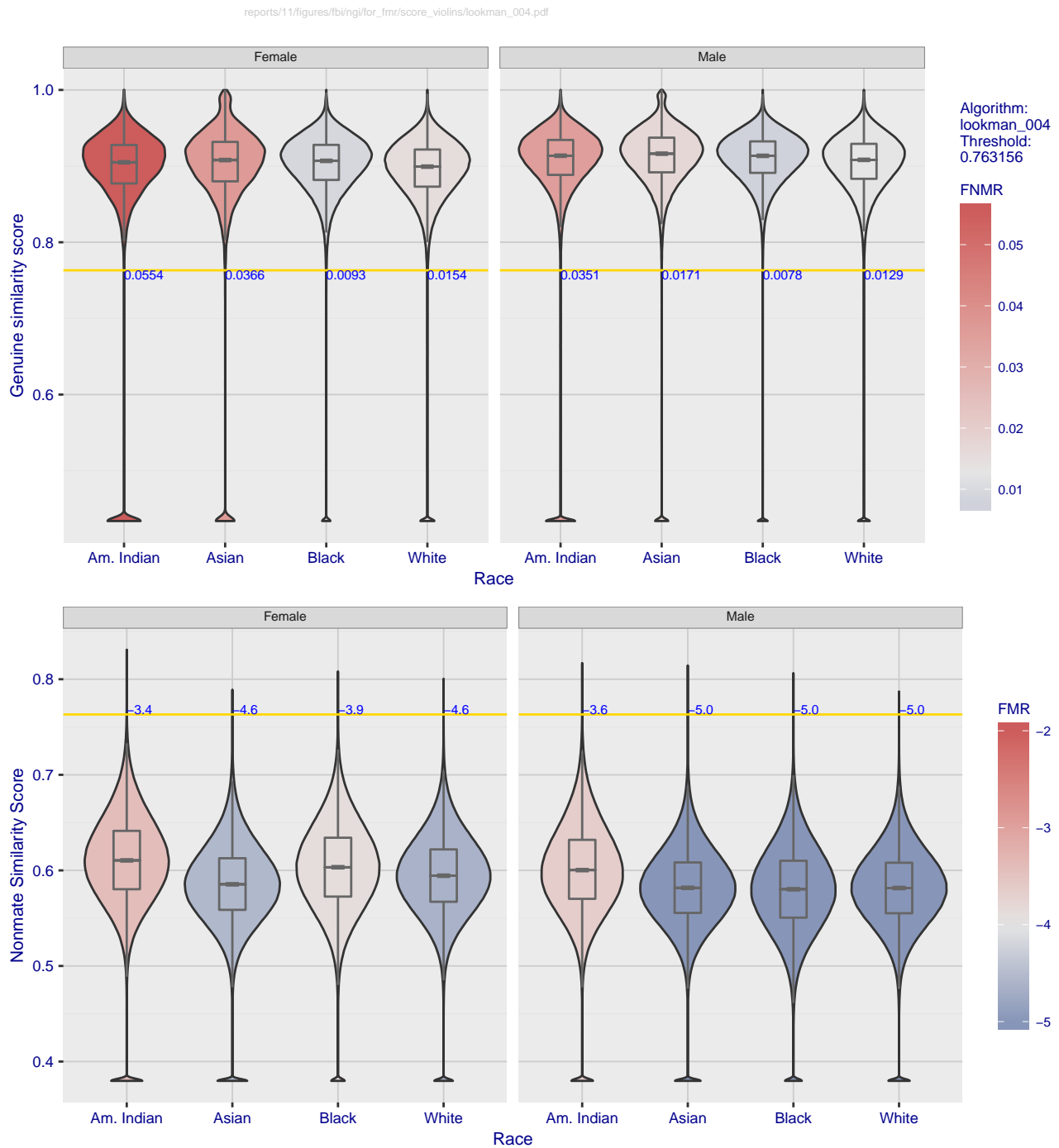


Figure 73: FNMR and FMR score distributions by sex and race, lookman-004. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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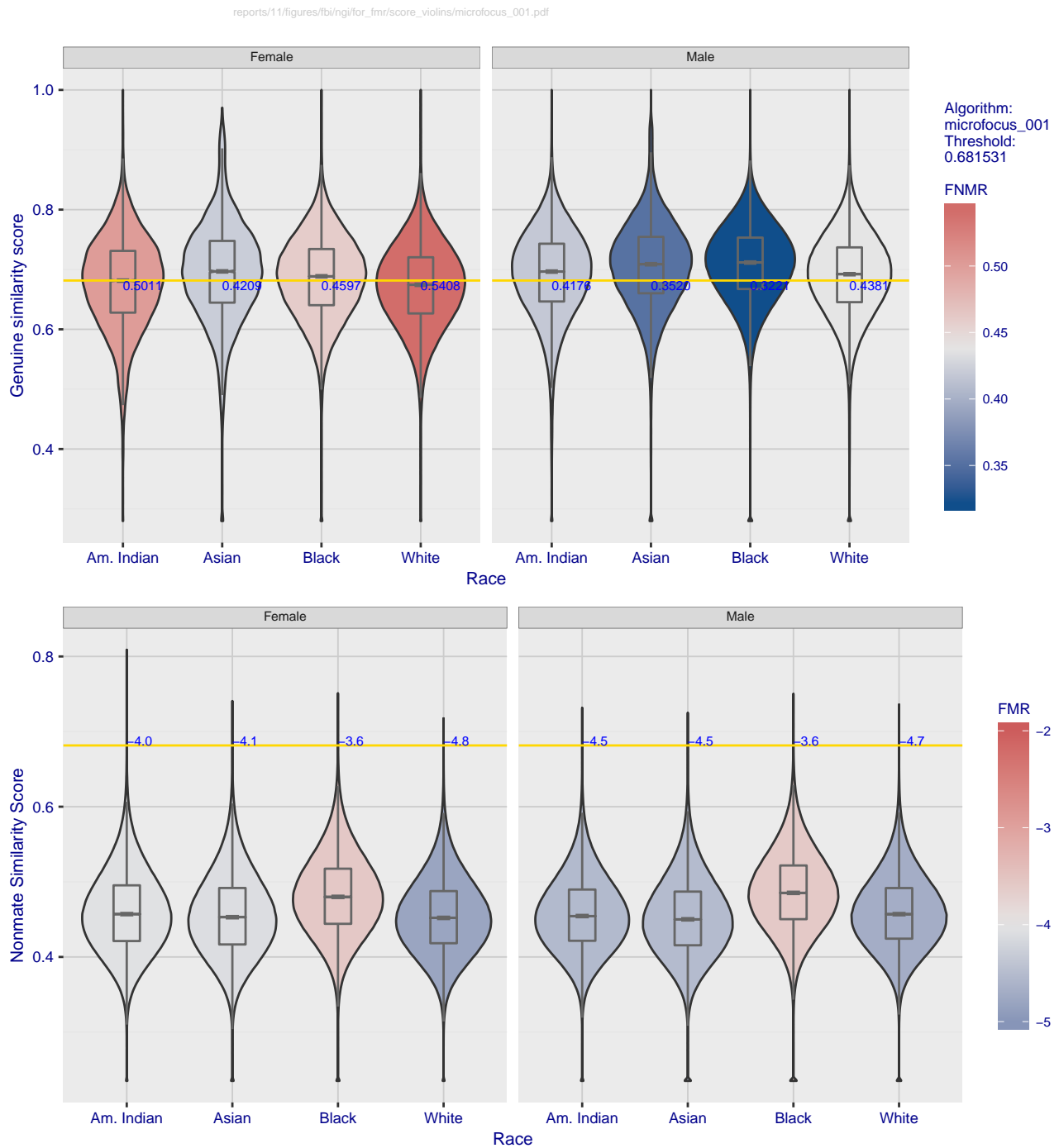


Figure 74: FNMR and FMR score distributions by sex and race, microfocus-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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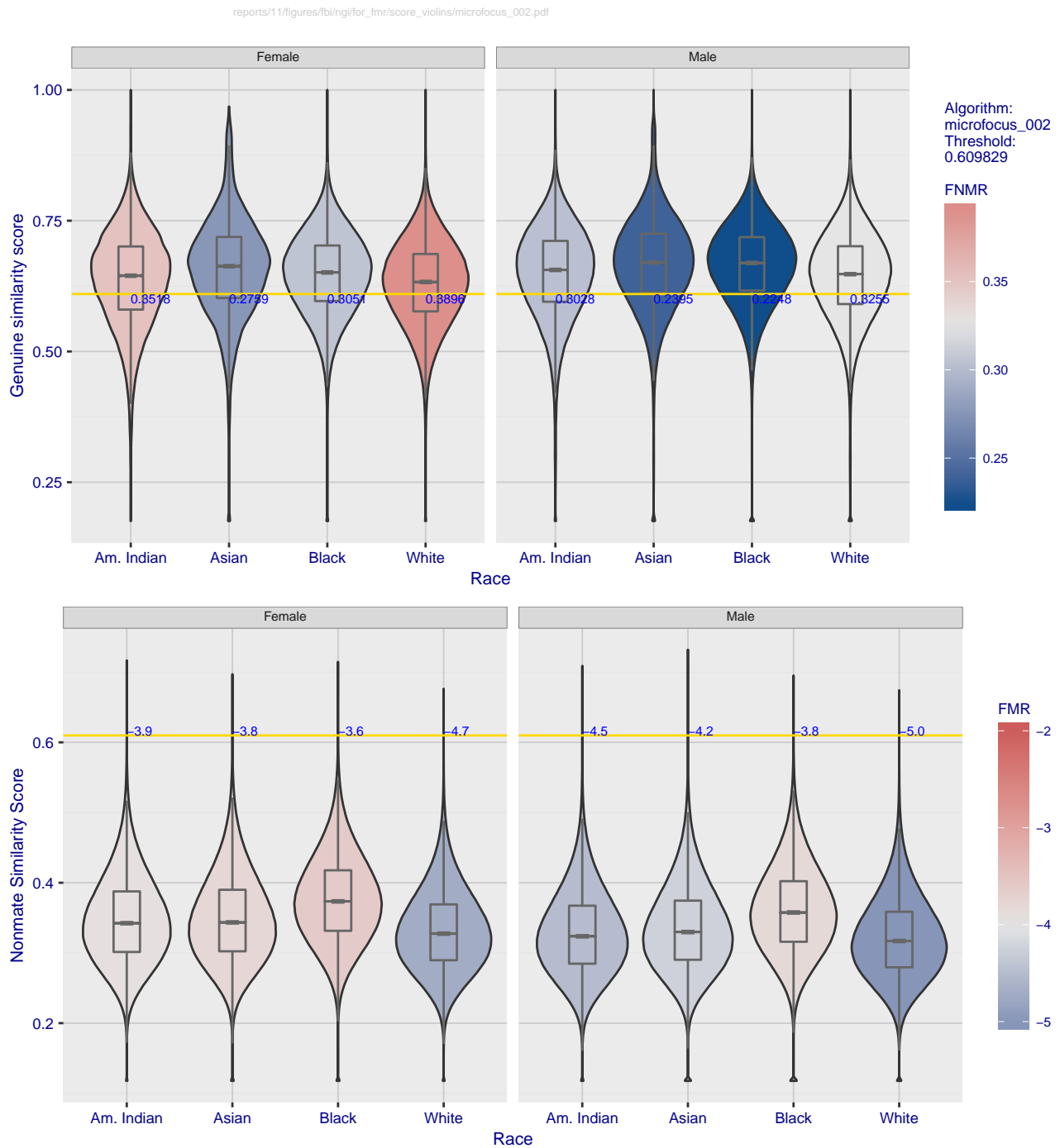


Figure 75: FNMR and FMR score distributions by sex and race, microfocus-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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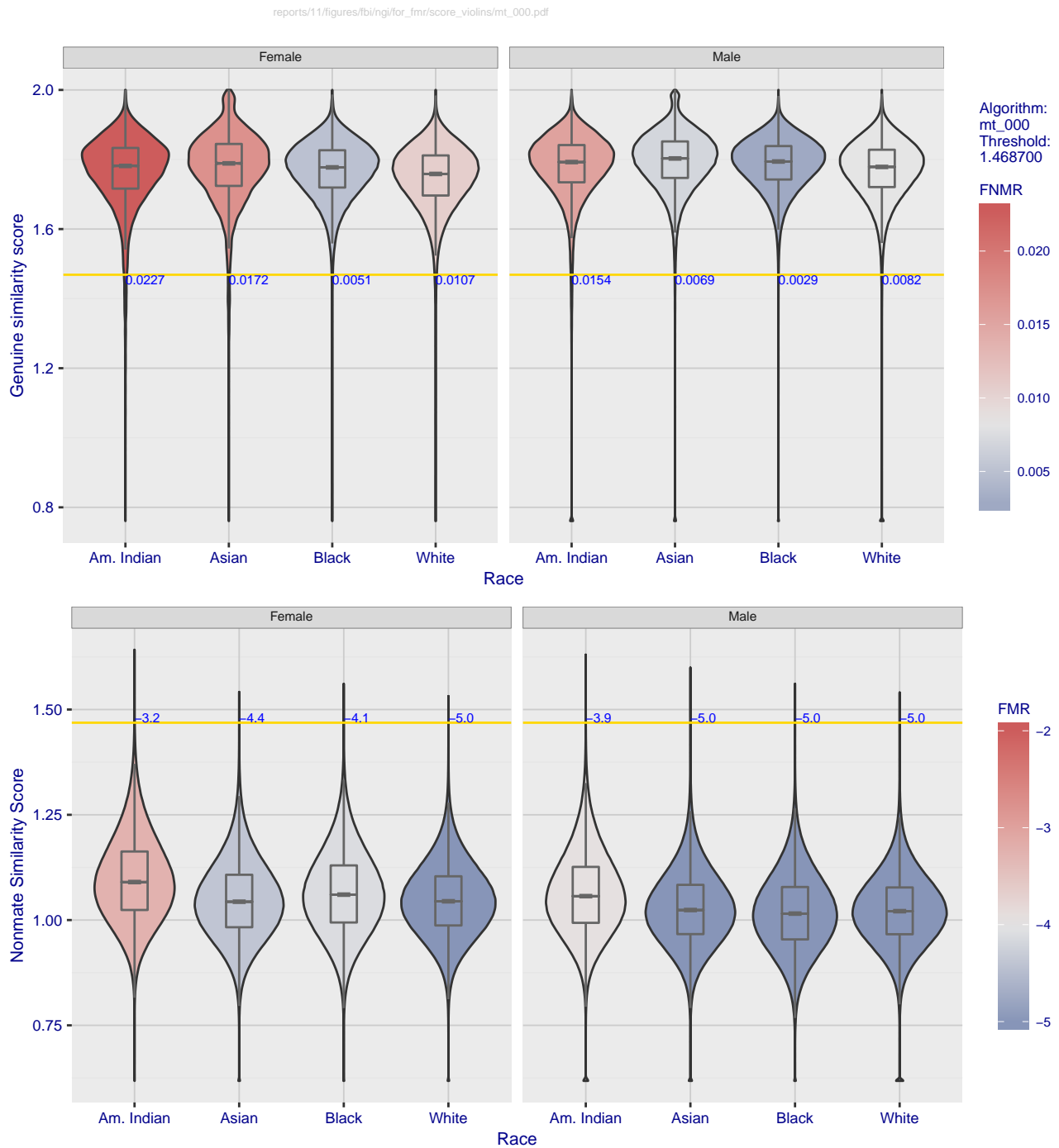


Figure 76: FNMR and FMR score distributions by sex and race, mt-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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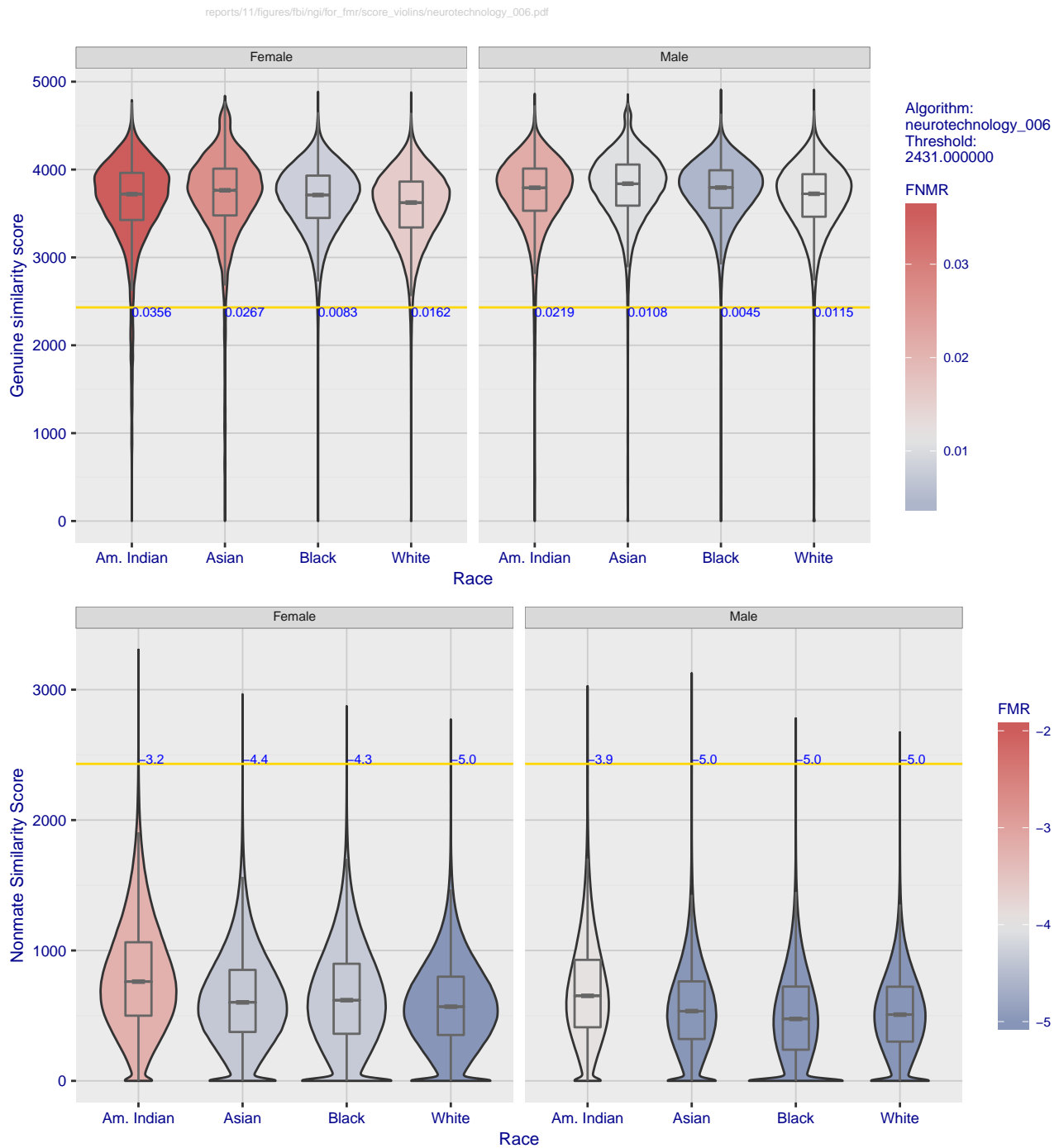


Figure 77: FNMR and FMR score distributions by sex and race, neurotechnology-006. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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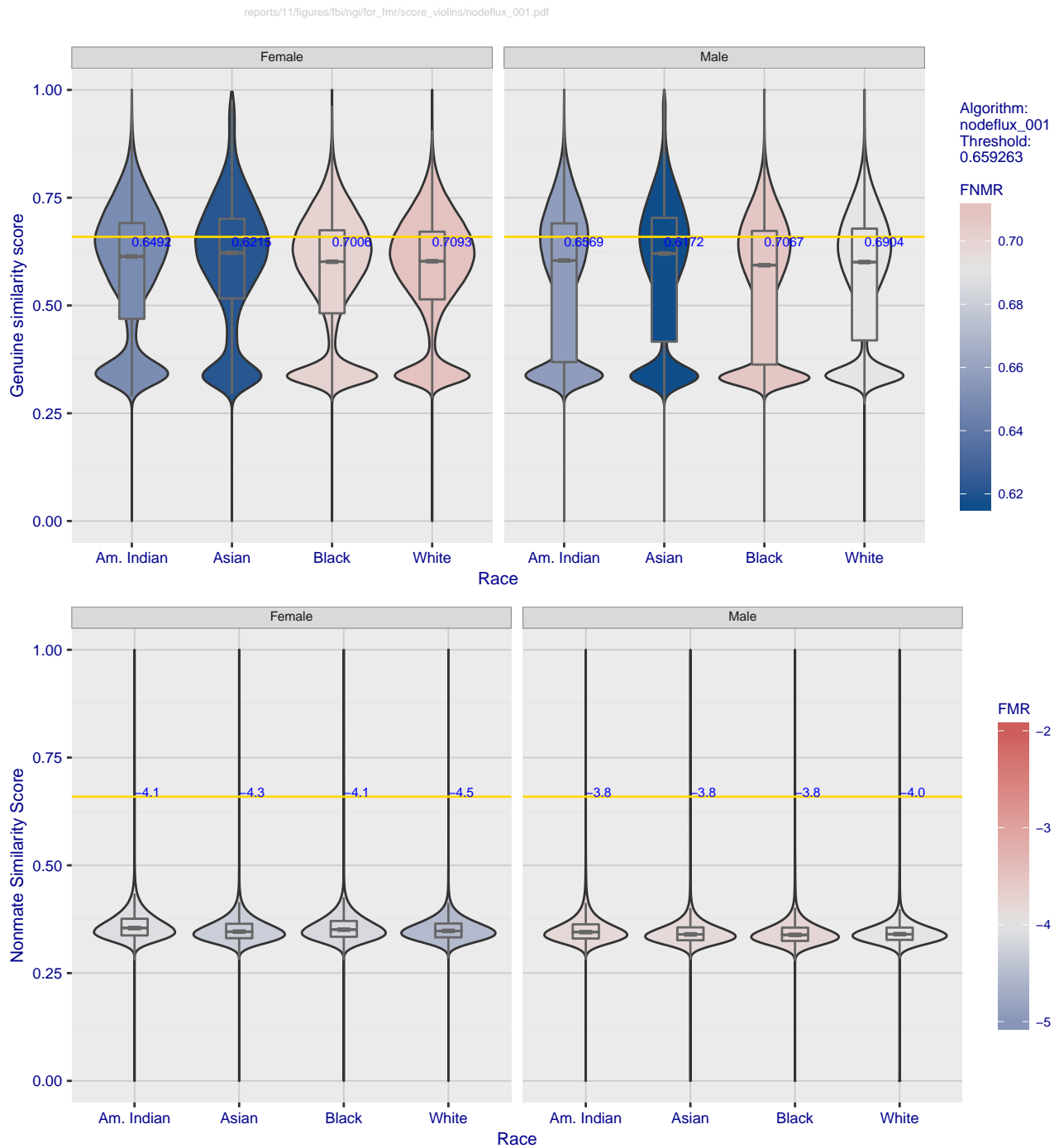


Figure 78: FNMR and FMR score distributions by sex and race, nodeflux-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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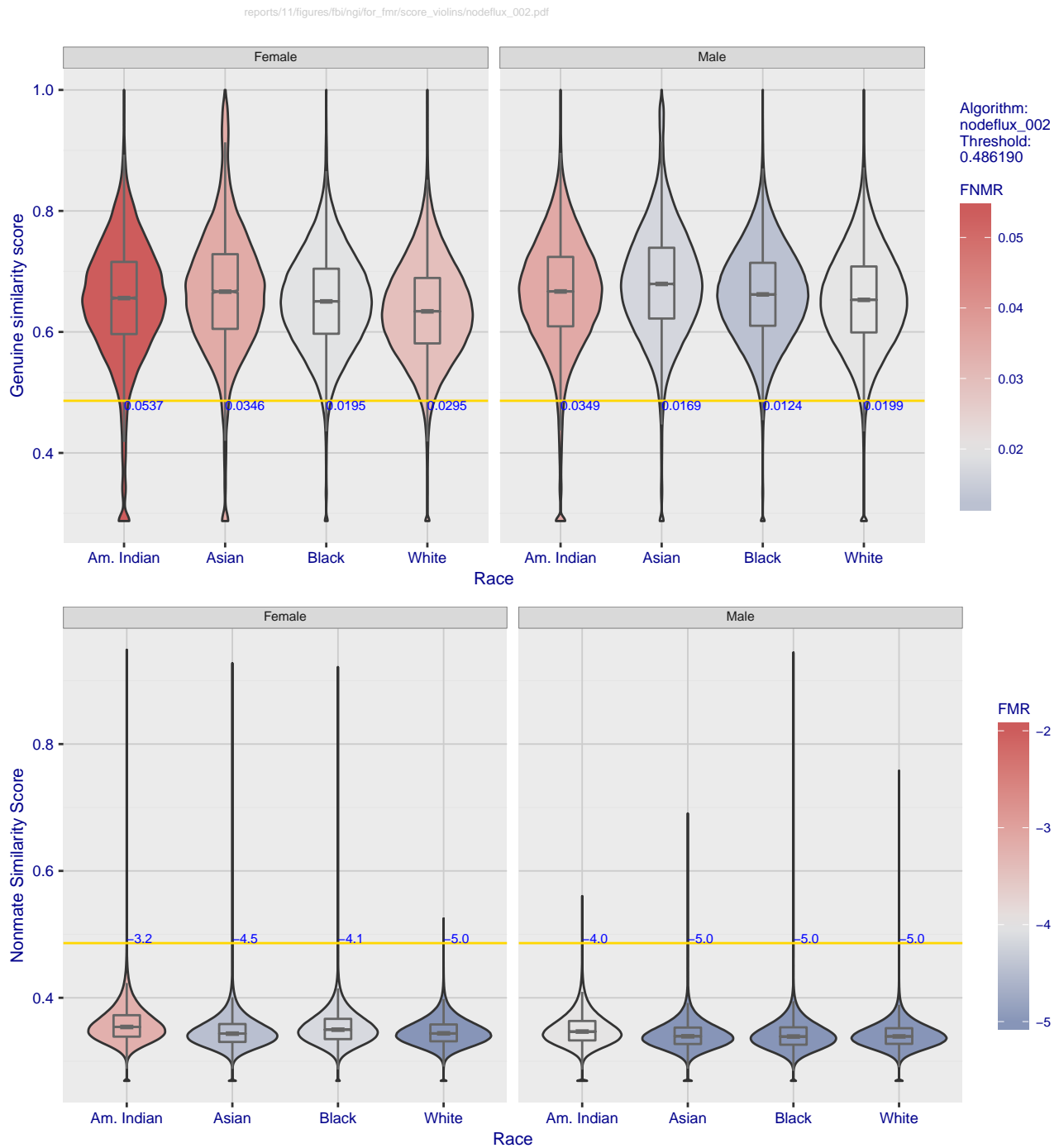


Figure 79: FNMR and FMR score distributions by sex and race, nodeflux-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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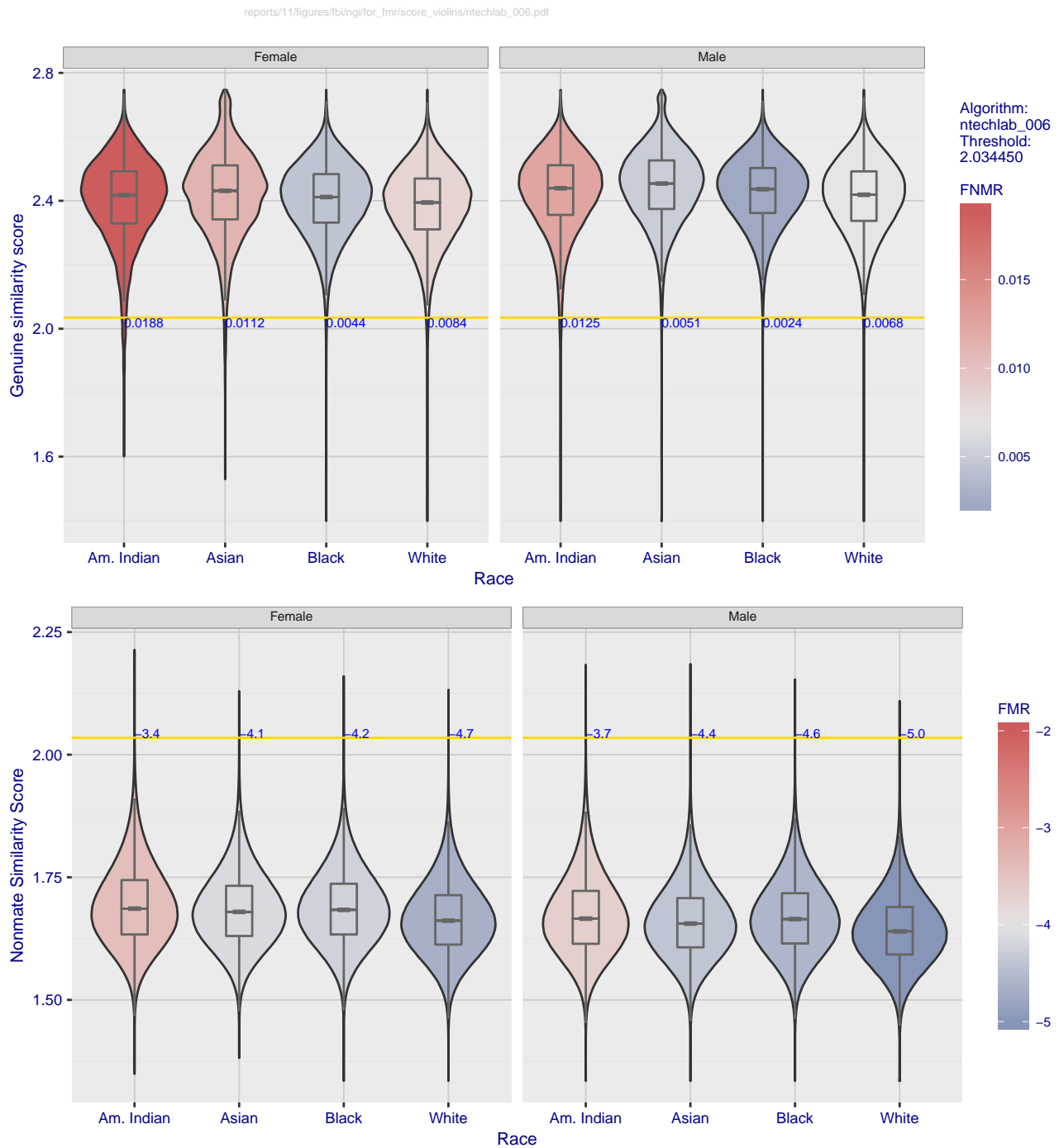


Figure 80: FNMR and FMR score distributions by sex and race, ntechlab-006. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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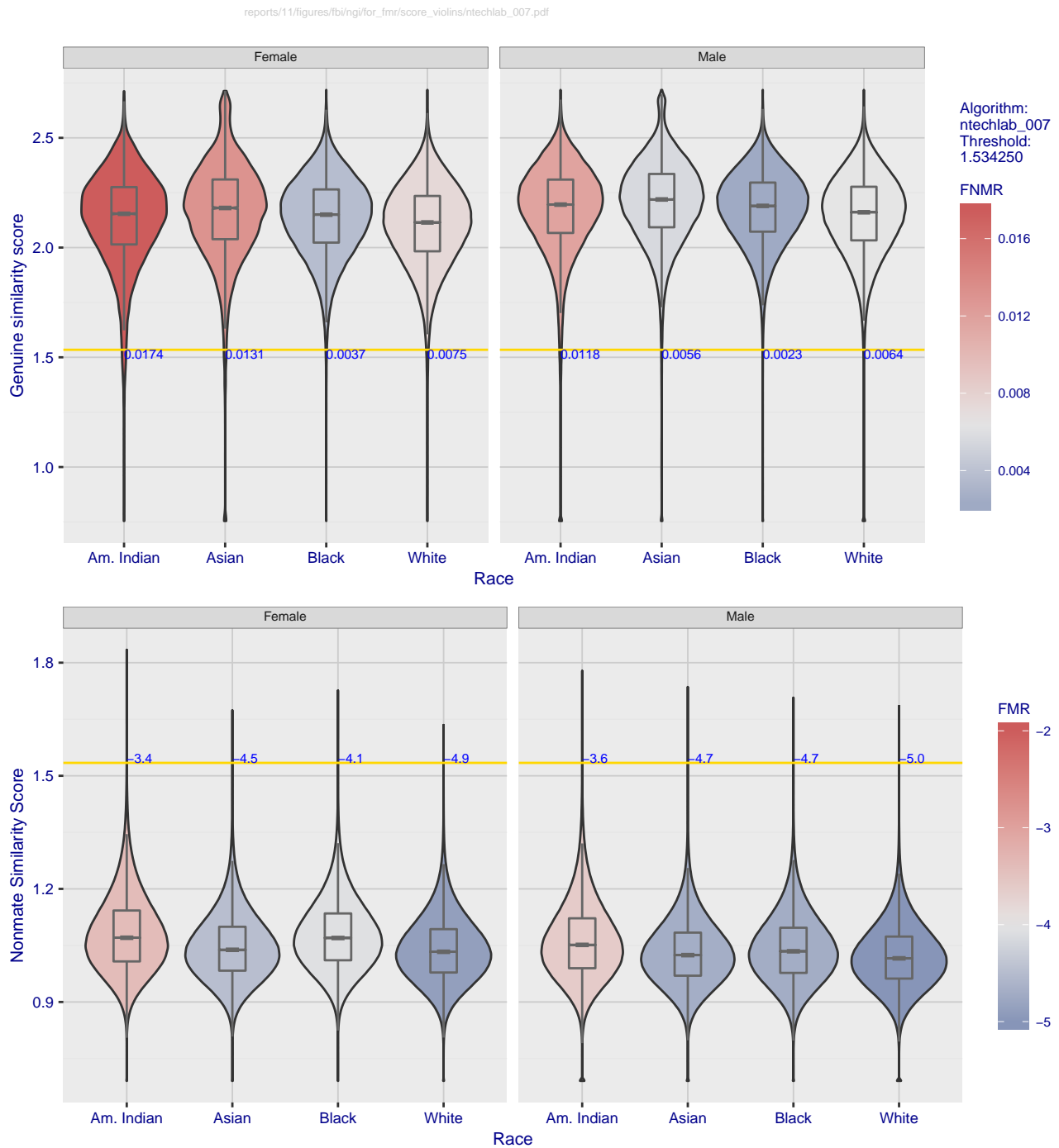


Figure 81: FNMR and FMR score distributions by sex and race, ntechlab-007. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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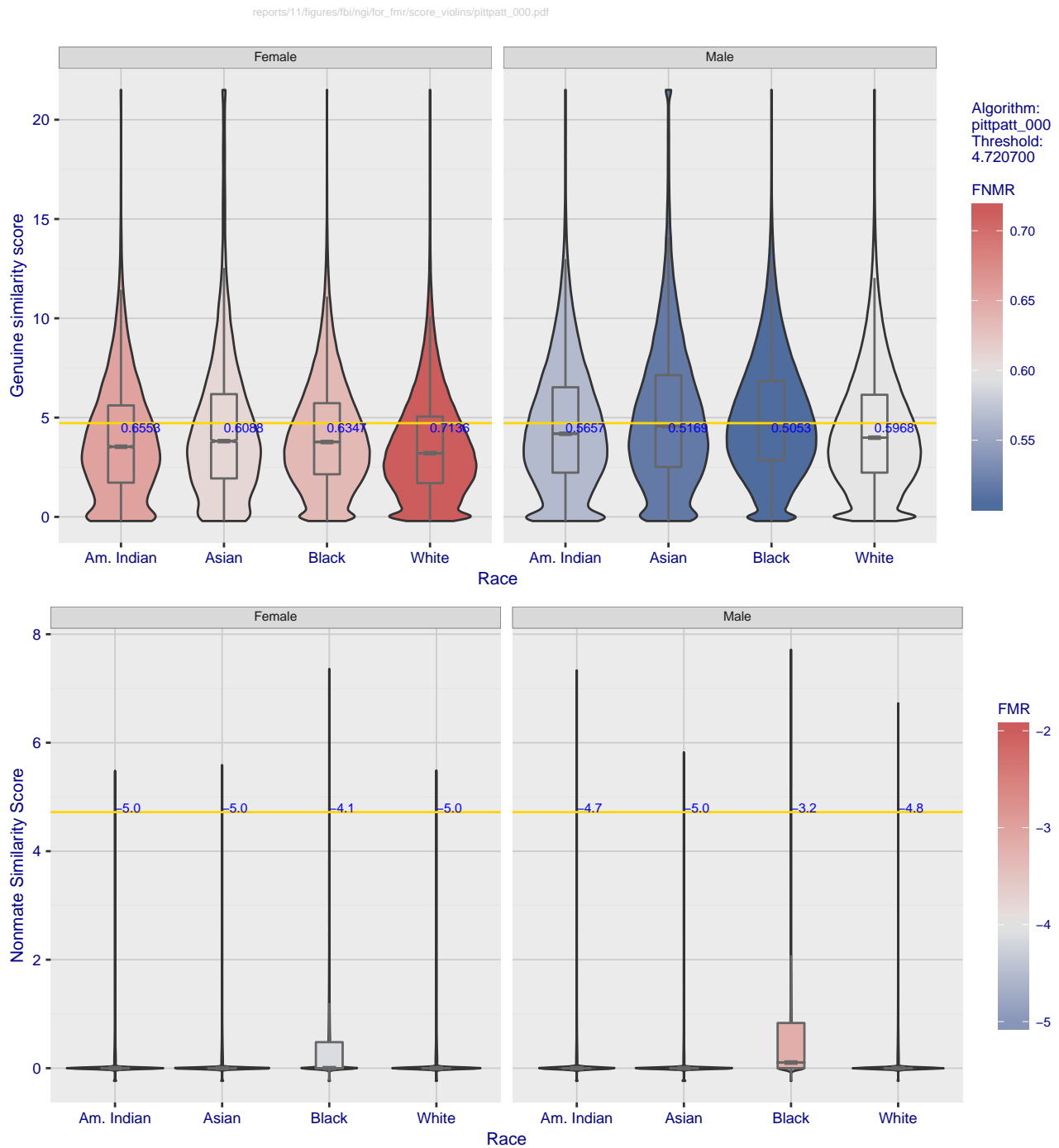


Figure 82: FNMR and FMR score distributions by sex and race, pittpatt-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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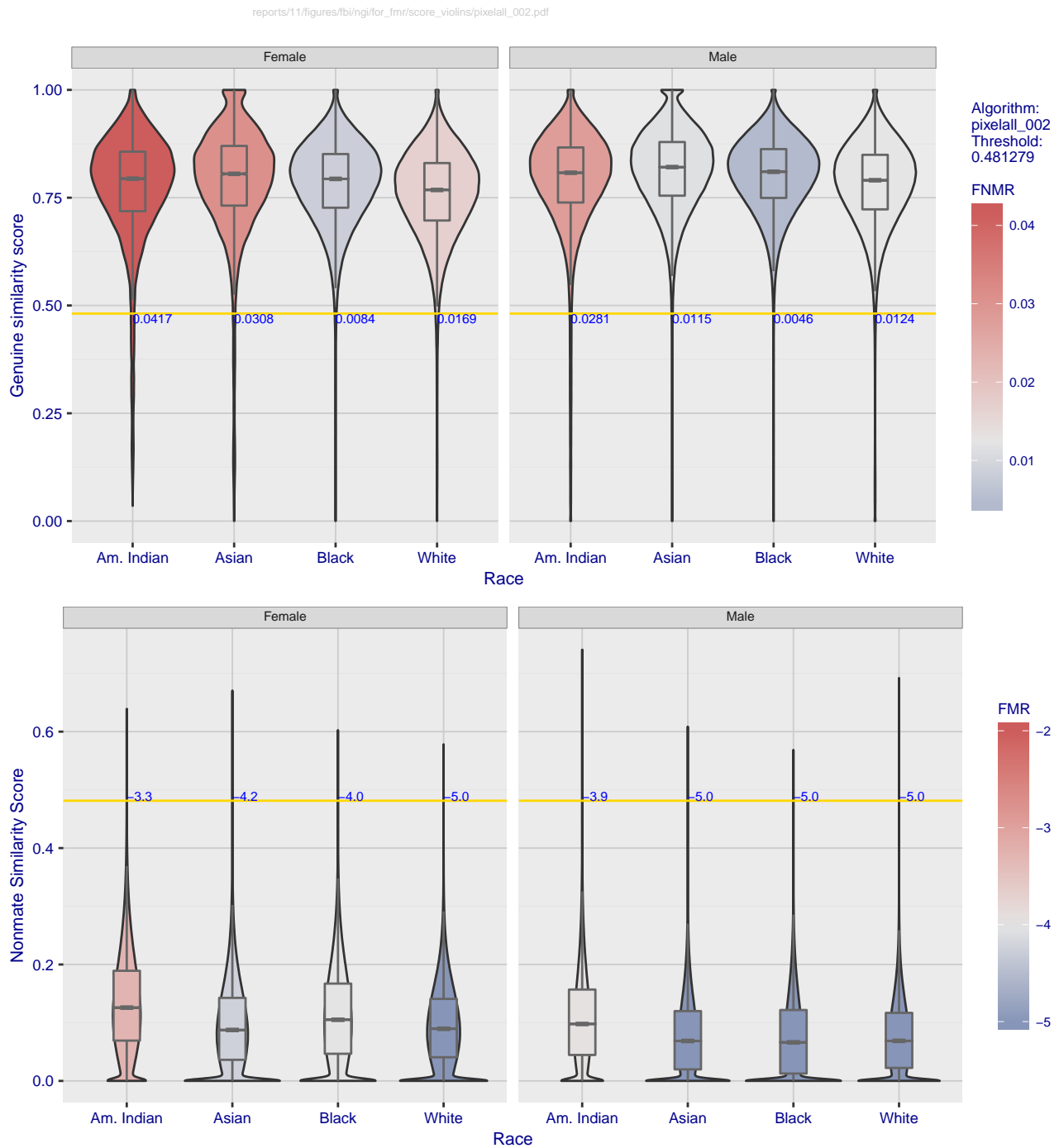


Figure 83: FNMR and FMR score distributions by sex and race, pixelall-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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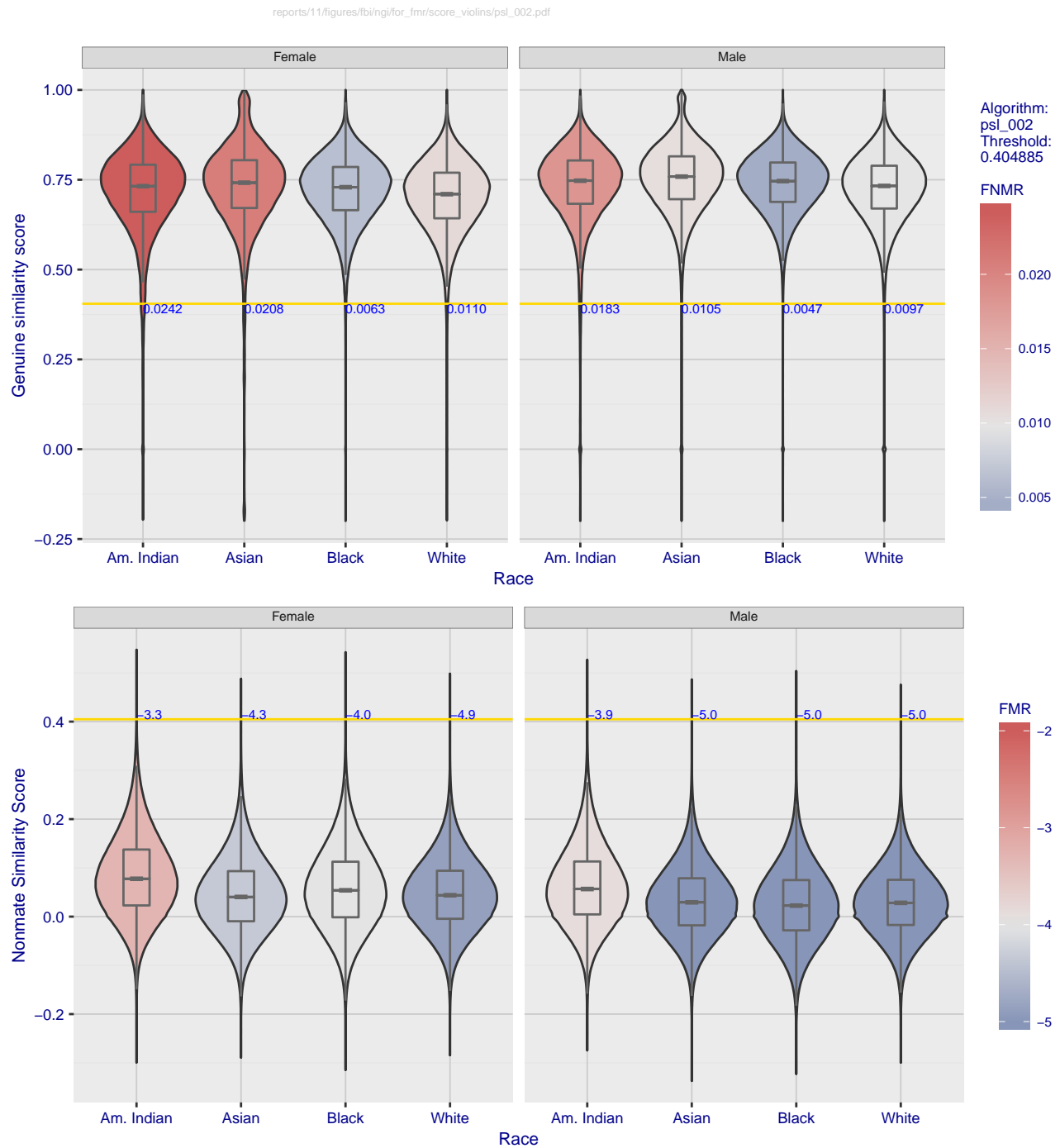


Figure 84: FNMR and FMR score distributions by sex and race, psl-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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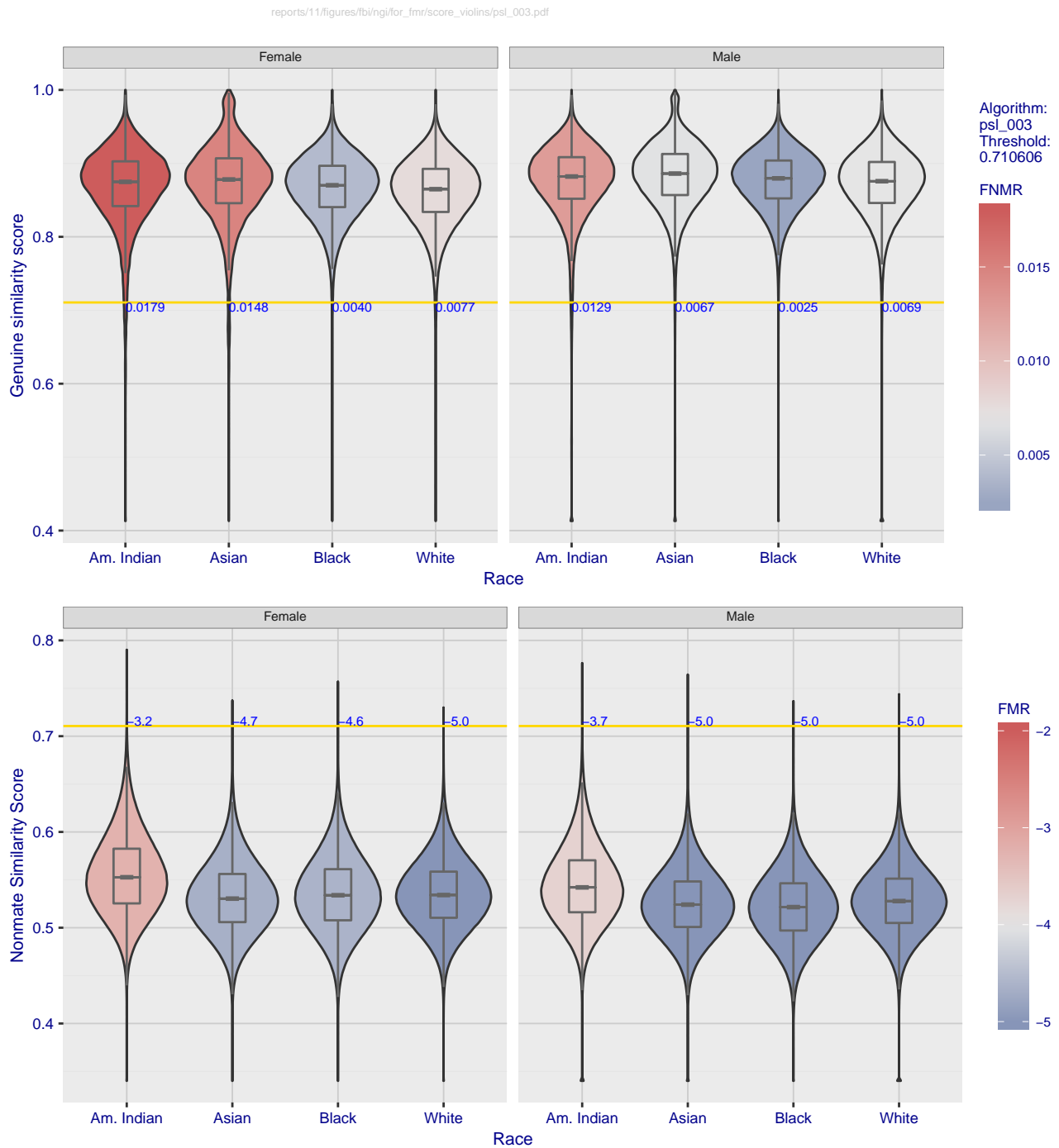


Figure 85: FNMR and FMR score distributions by sex and race, psl-003. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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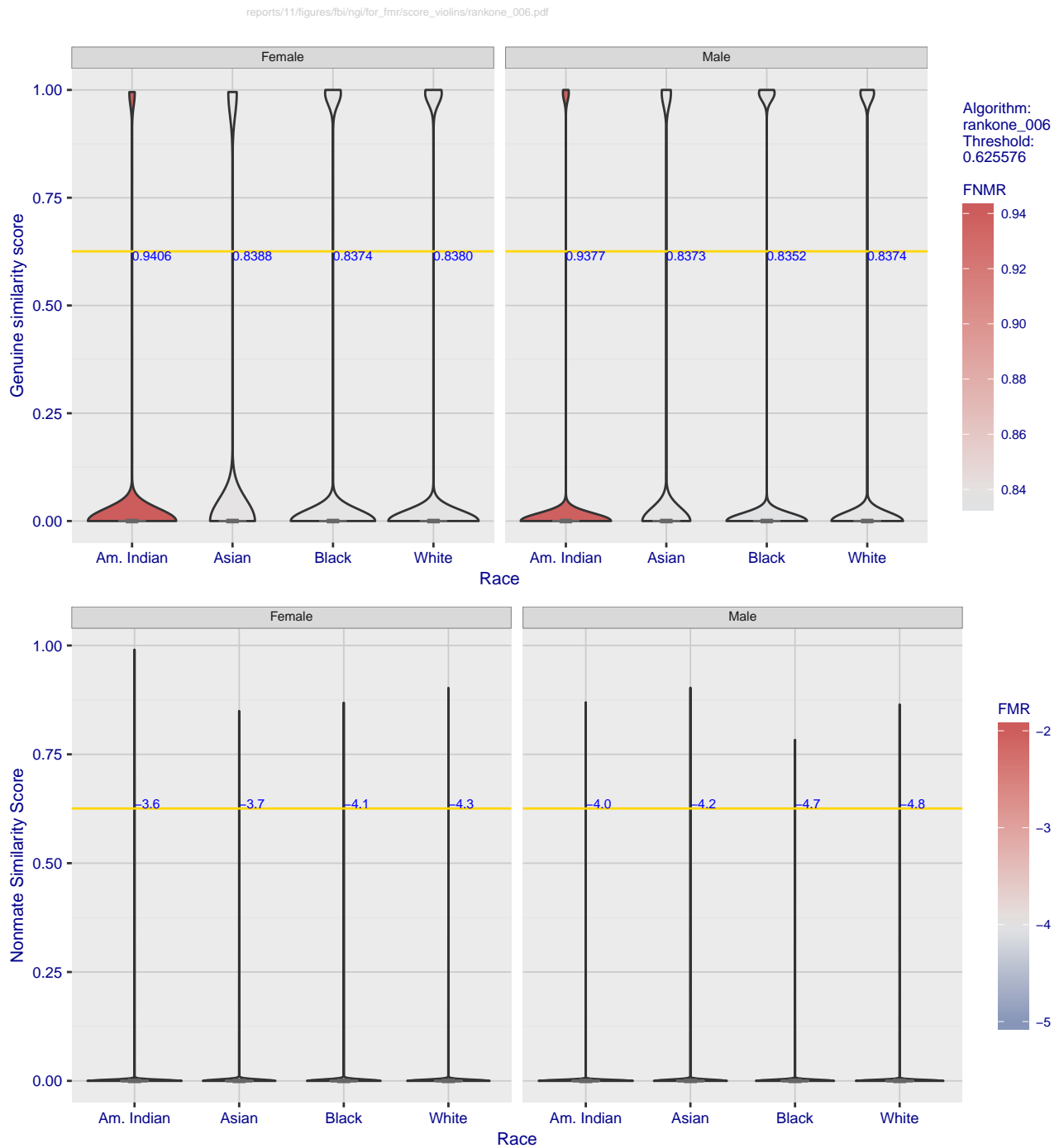


Figure 86: FNMR and FMR score distributions by sex and race, rankone-006. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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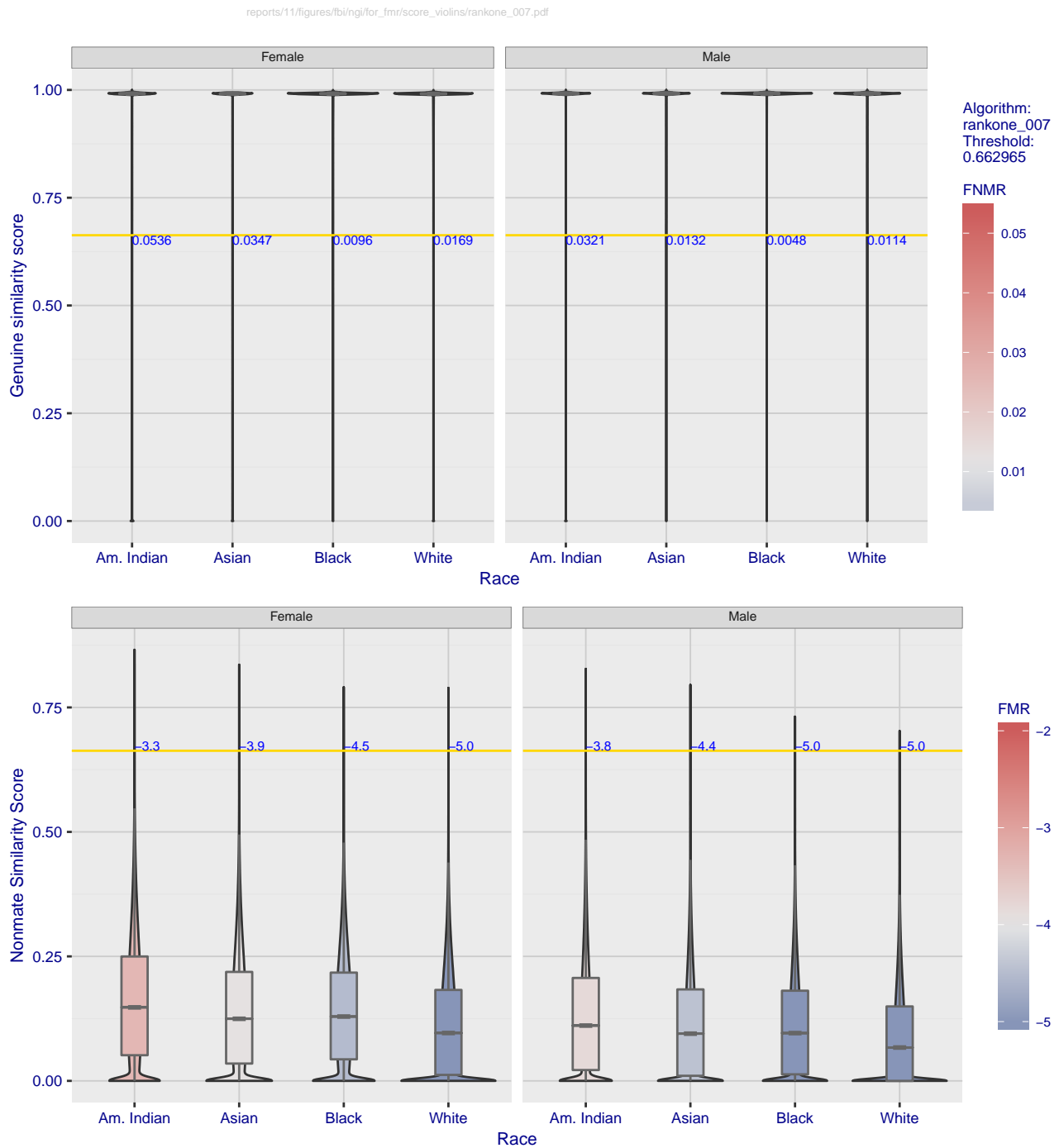


Figure 87: FNMR and FMR score distributions by sex and race, rankone-007. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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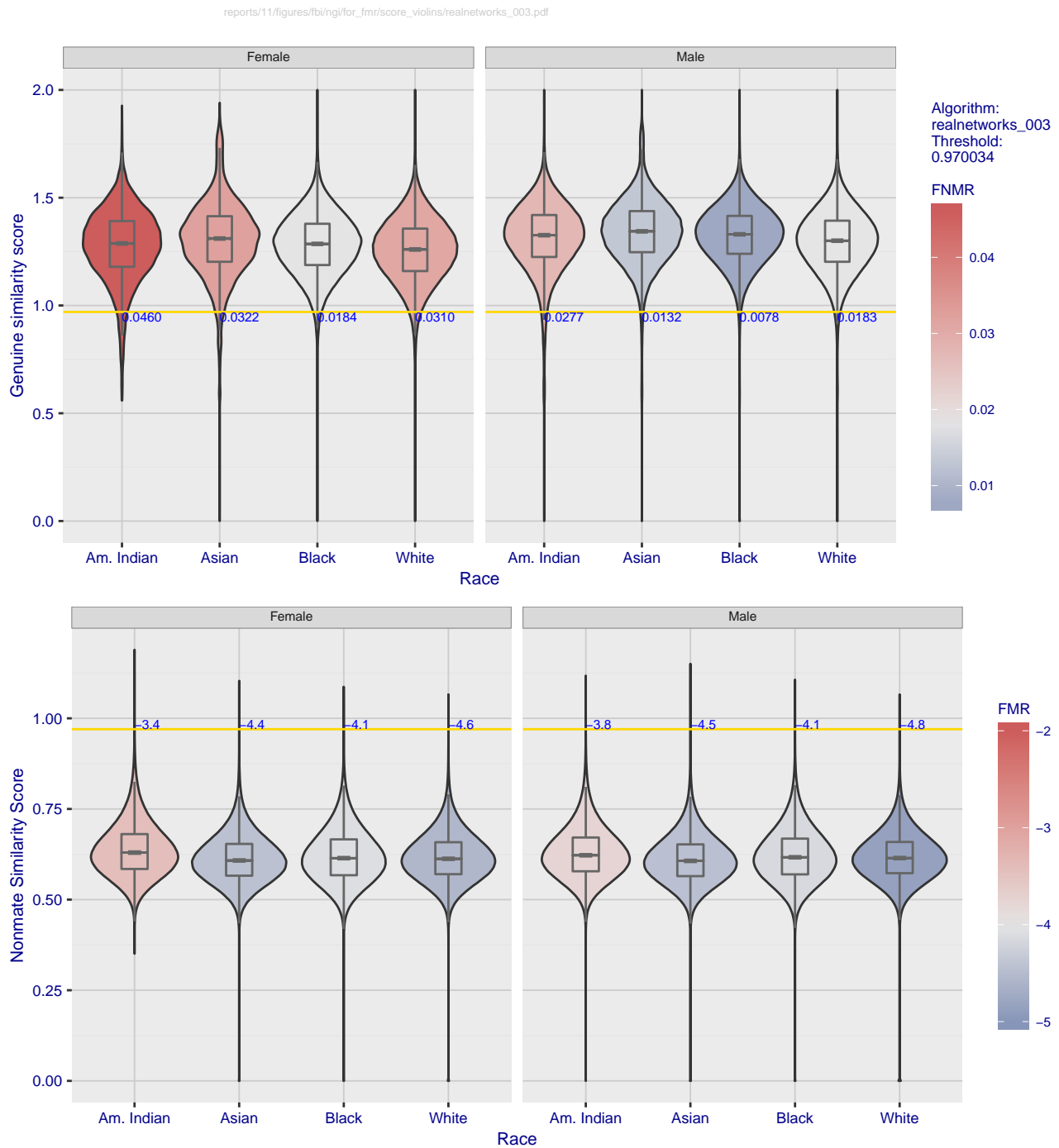


Figure 88: FNMR and FMR score distributions by sex and race, realnetworks-003. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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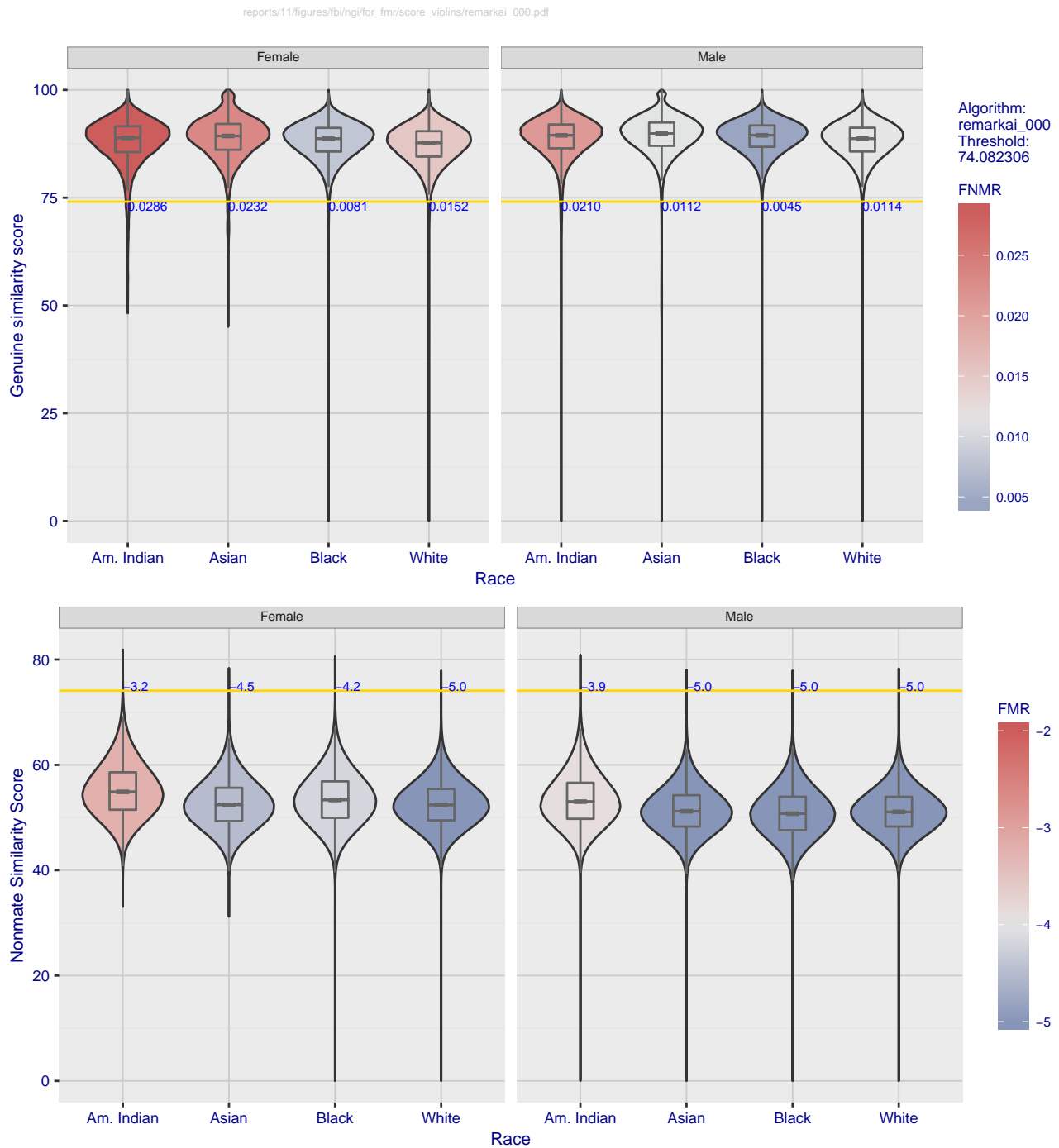


Figure 89: FNMR and FMR score distributions by sex and race, remarkai-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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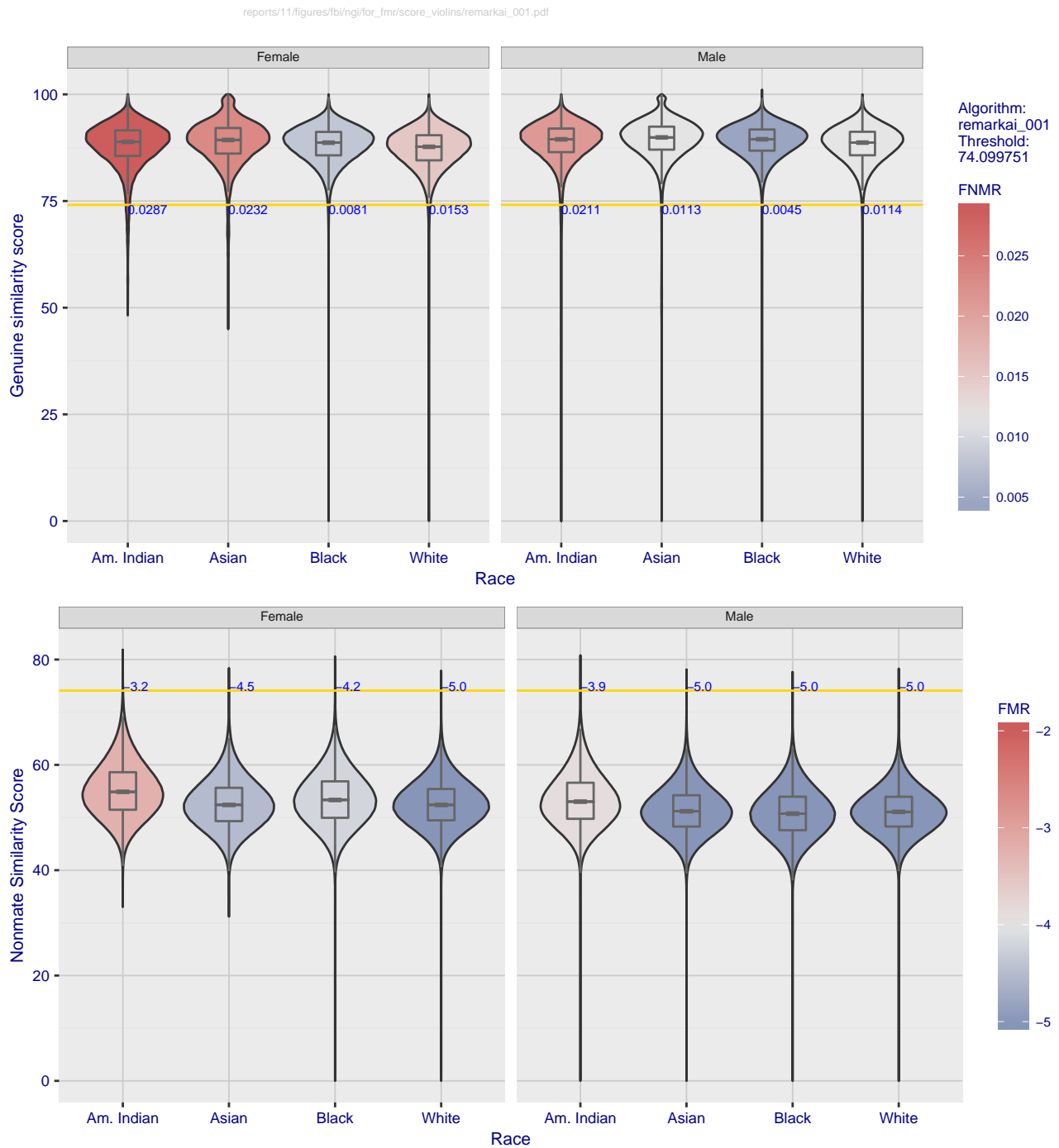


Figure 90: FNMR and FMR score distributions by sex and race, remarkai-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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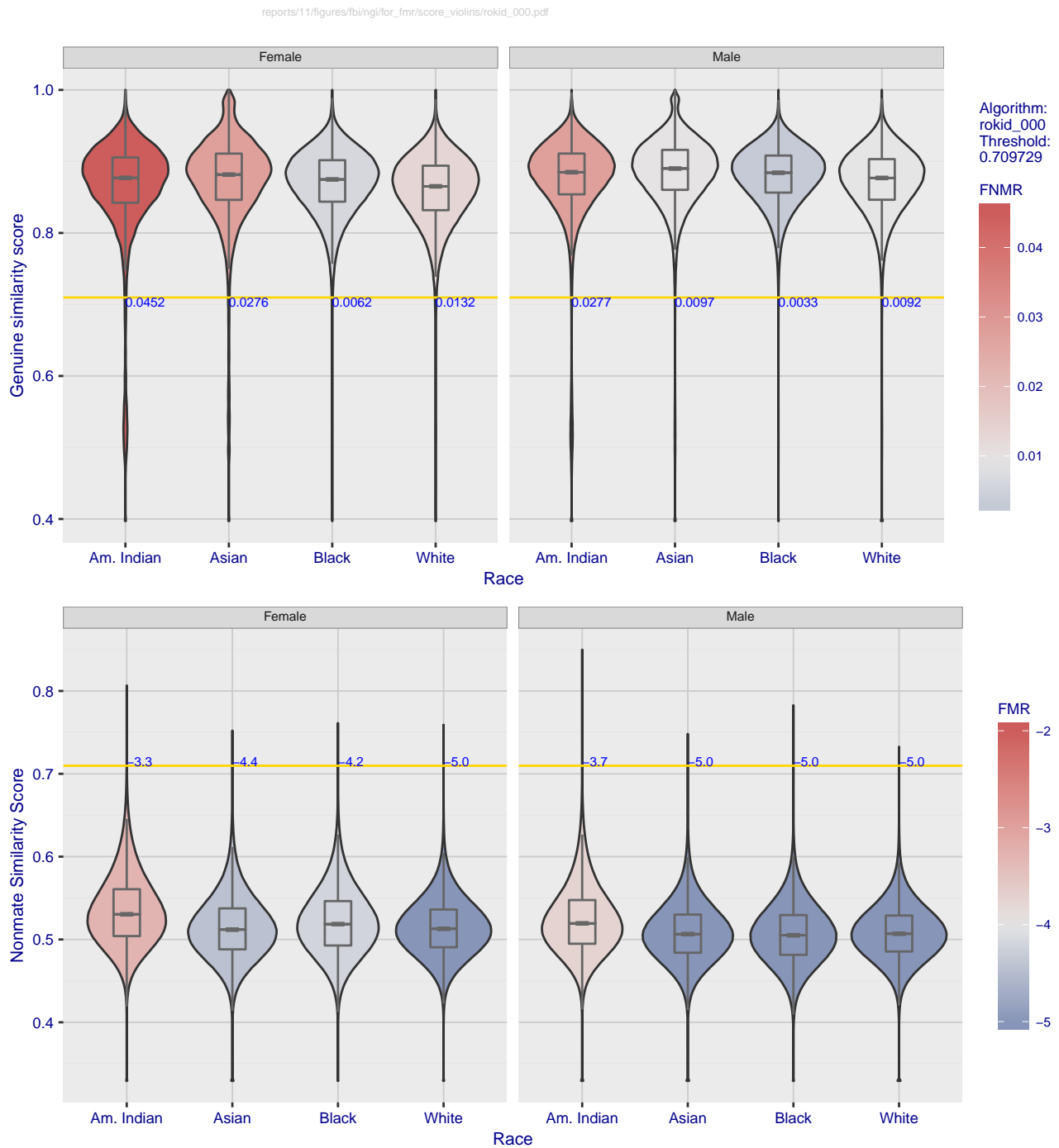


Figure 91: FNMR and FMR score distributions by sex and race, rokid-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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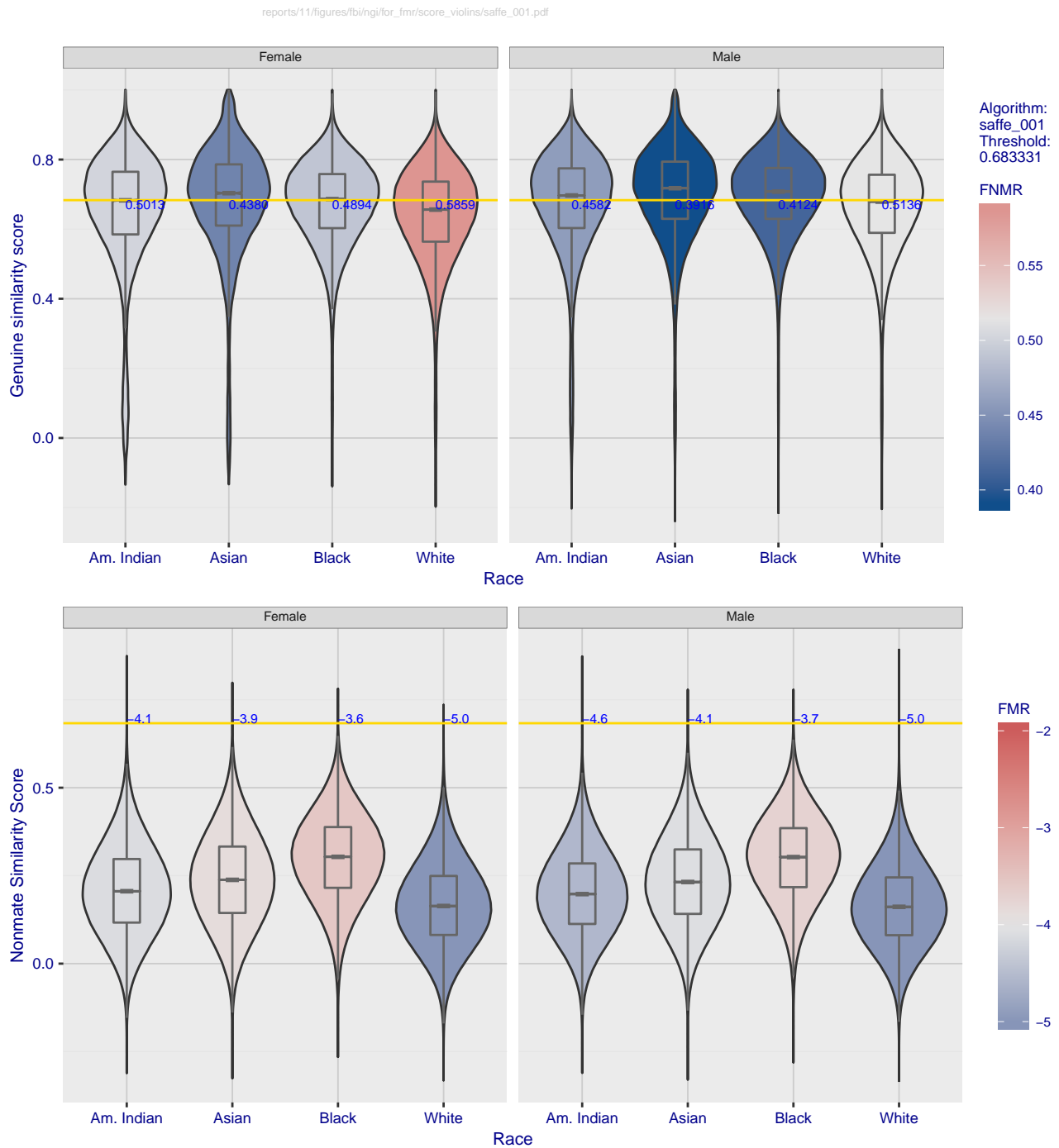


Figure 92: FNMR and FMR score distributions by sex and race, saffe-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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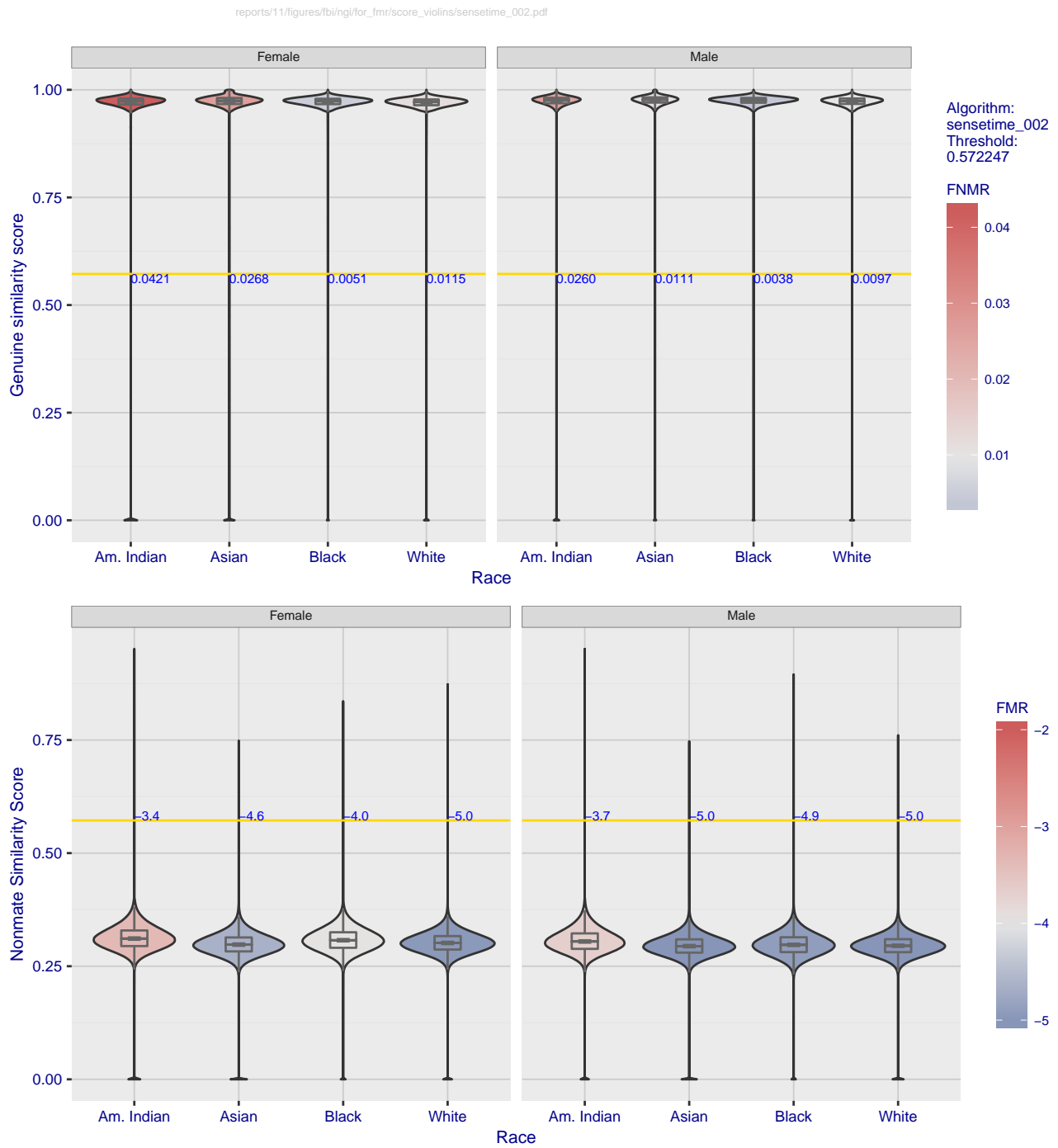


Figure 93: FNMR and FMR score distributions by sex and race, sensetime-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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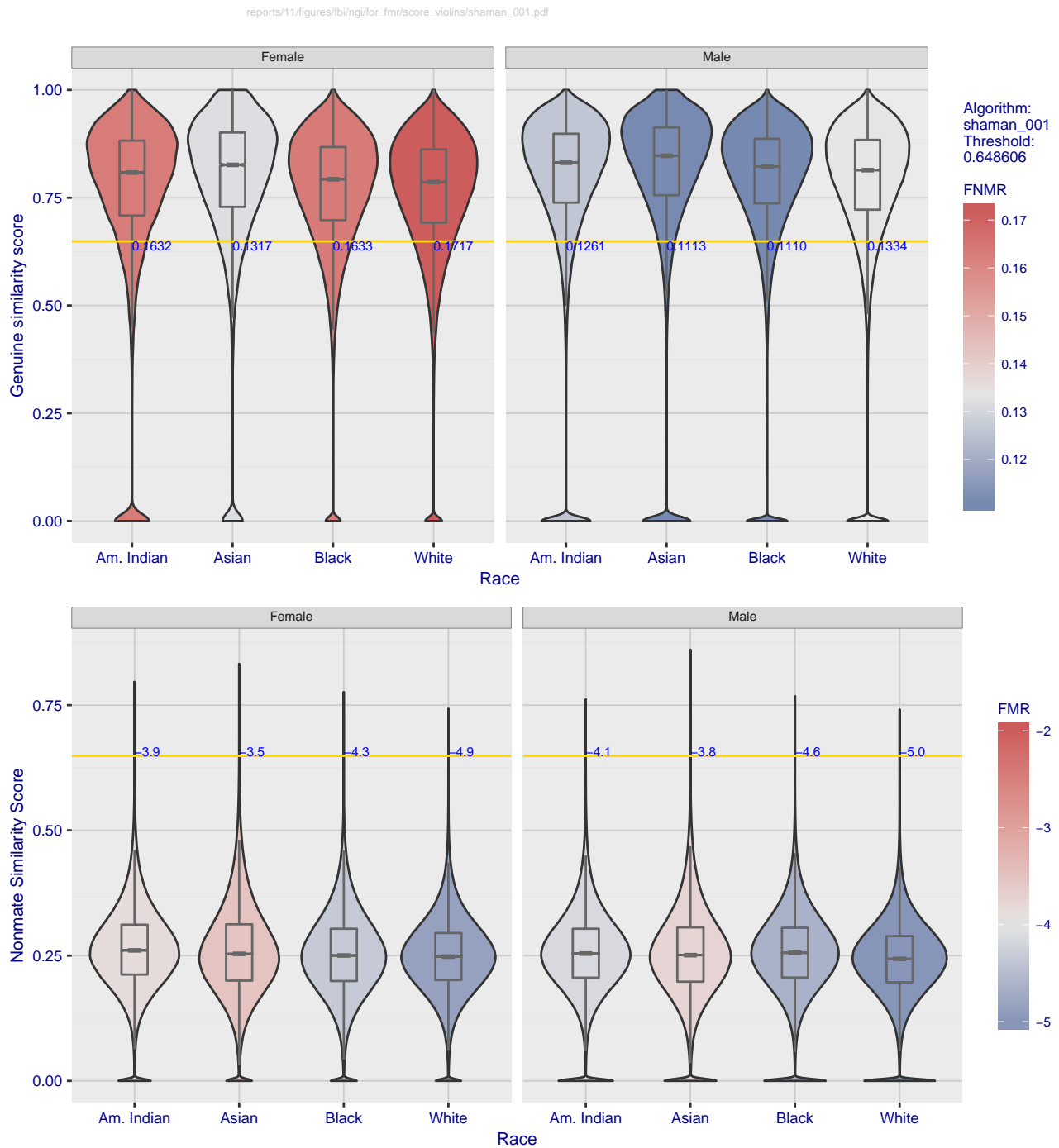


Figure 94: FNMR and FMR score distributions by sex and race, shaman-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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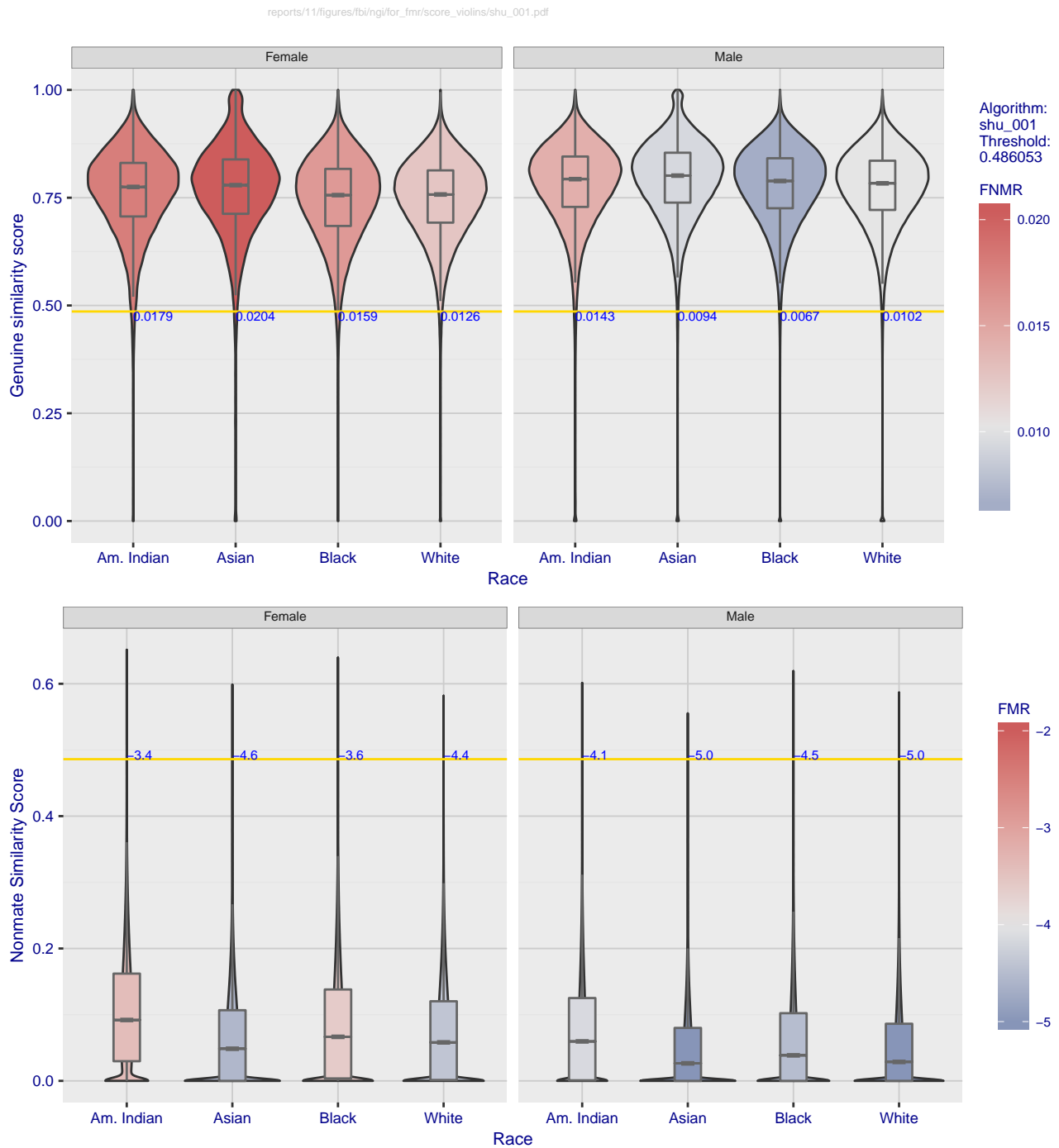


Figure 95: FNMR and FMR score distributions by sex and race, shu-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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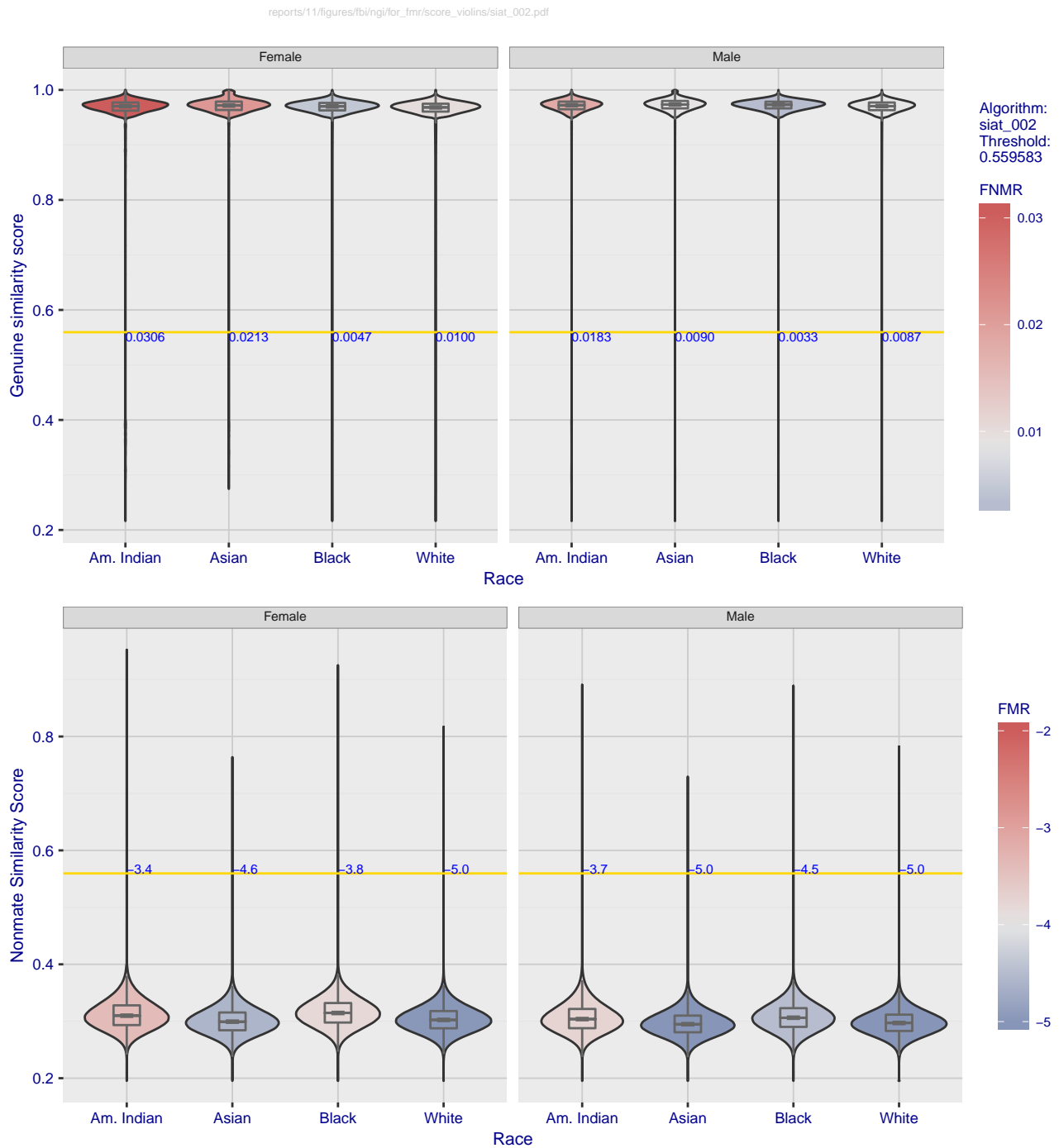


Figure 96: FNMR and FMR score distributions by sex and race, siat-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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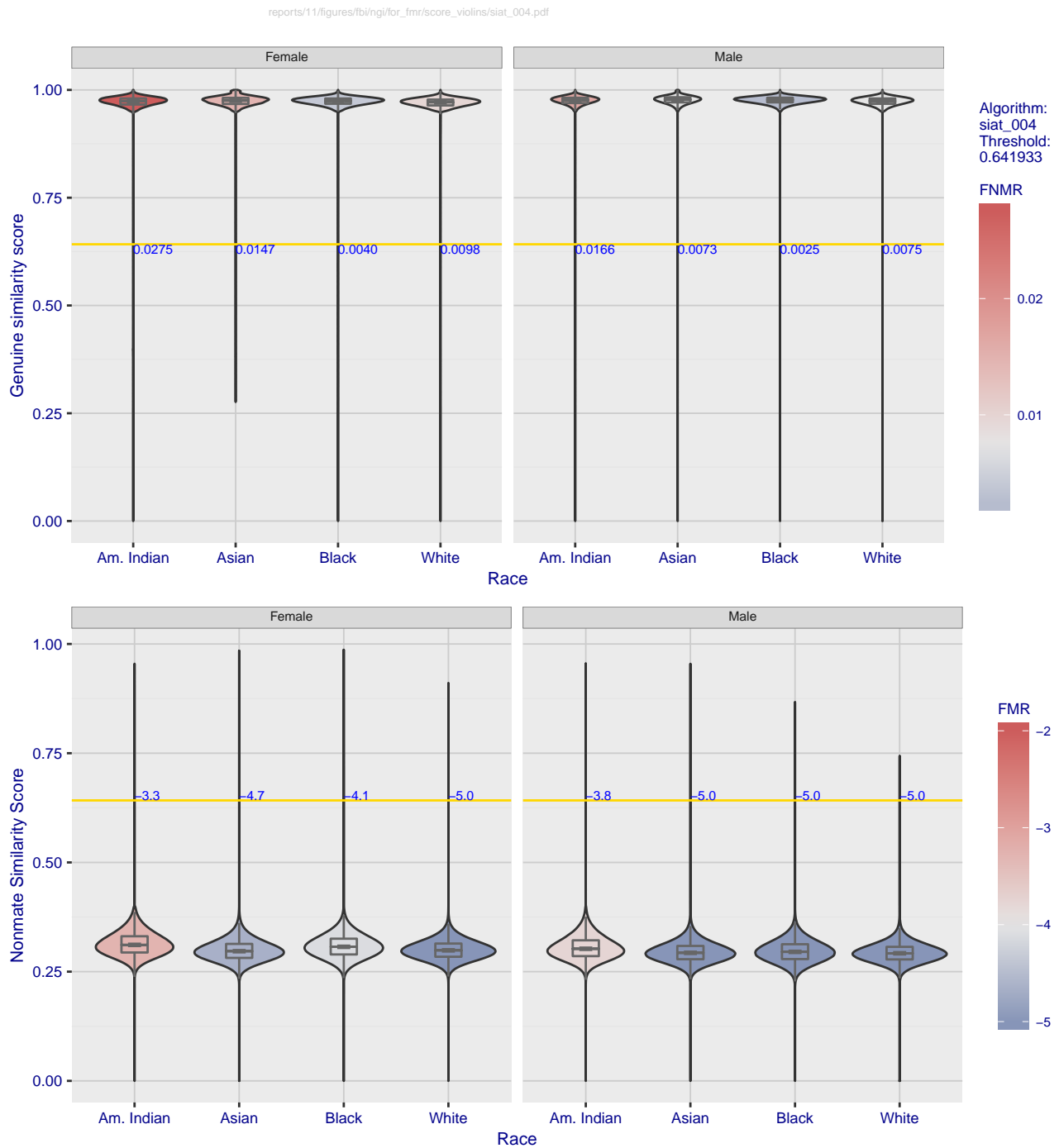


Figure 97: FNMR and FMR score distributions by sex and race, siat-004. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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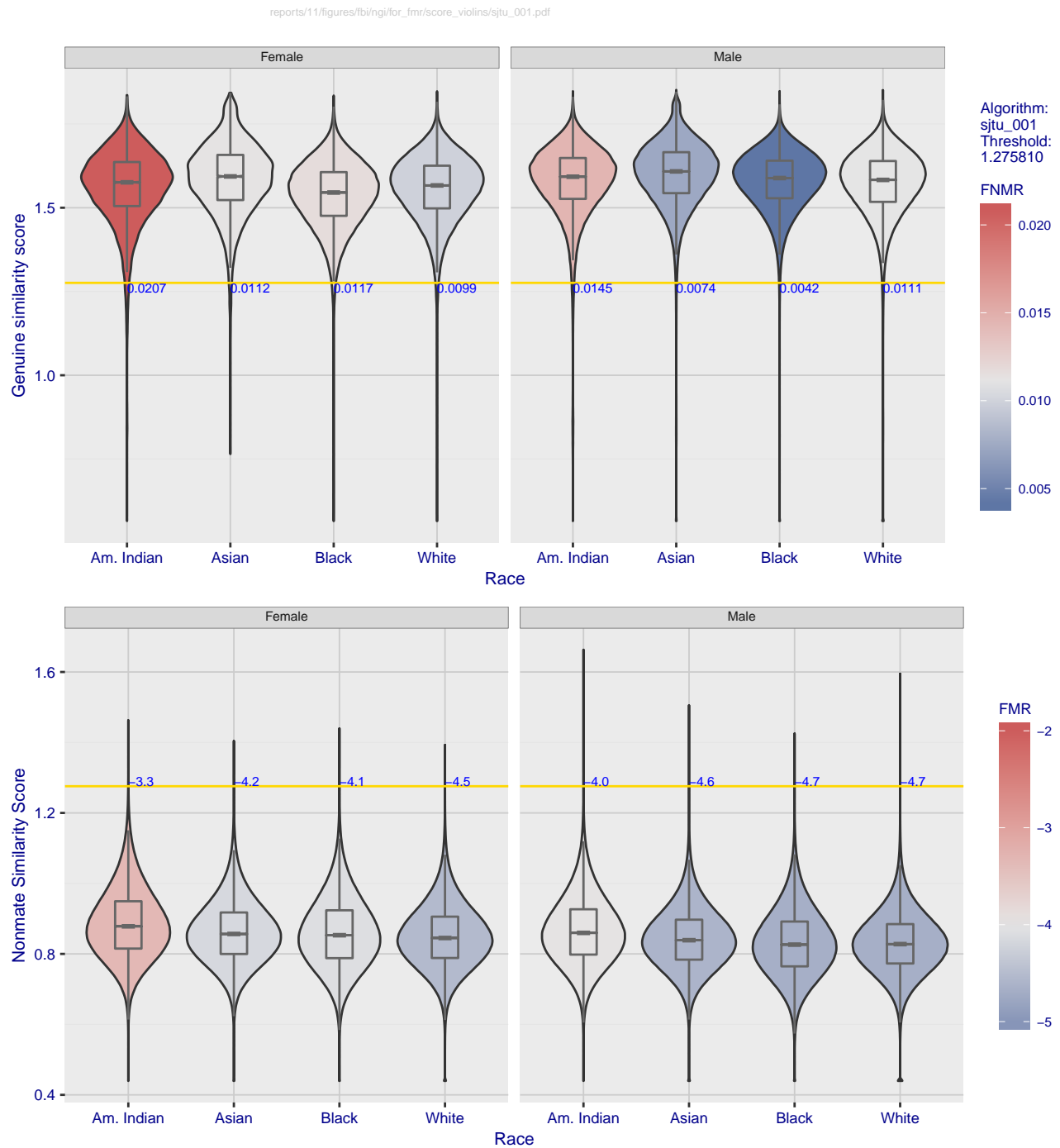


Figure 98: FNMR and FMR score distributions by sex and race, sjtu-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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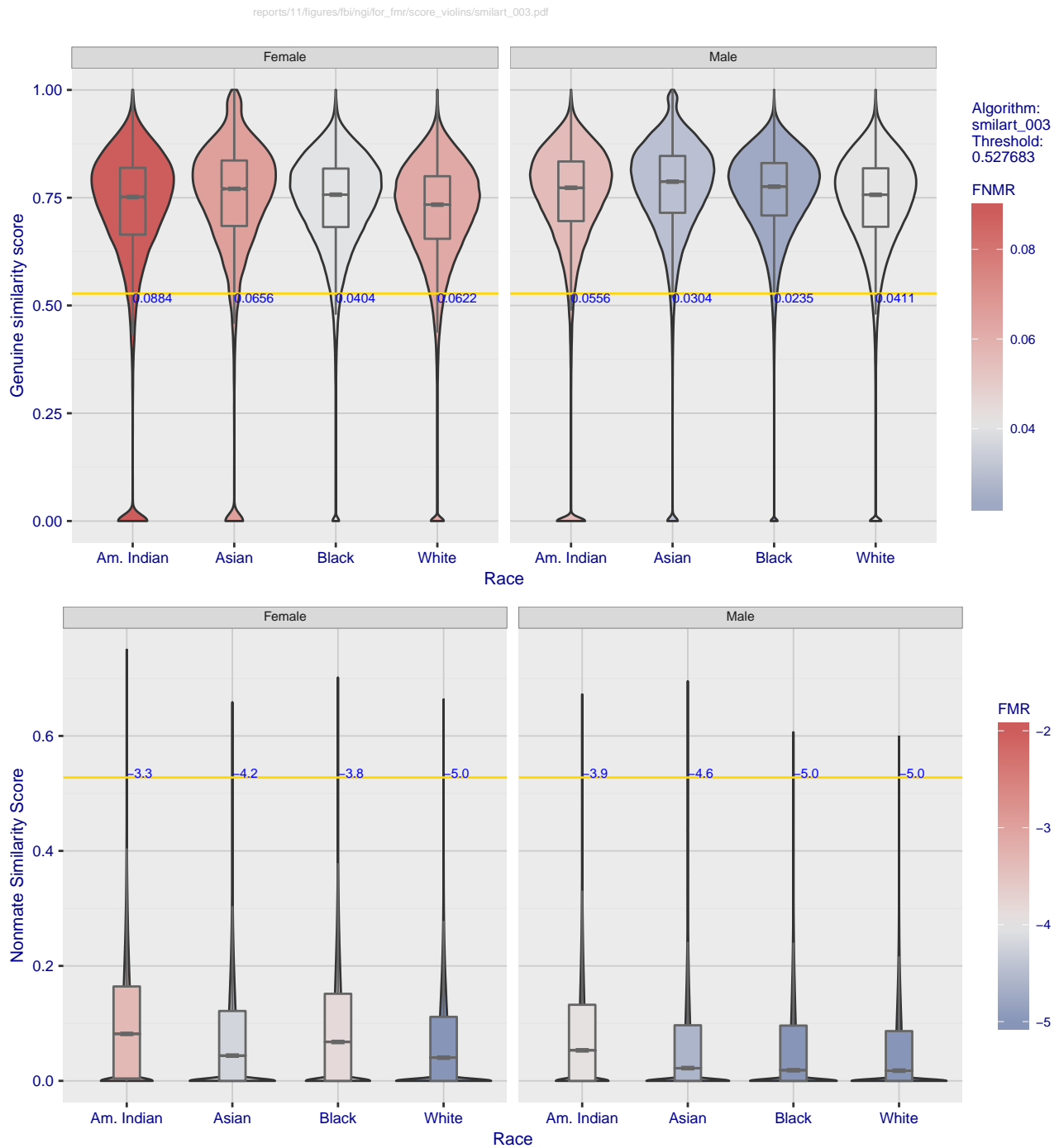


Figure 99: FNMR and FMR score distributions by sex and race, smilart-003. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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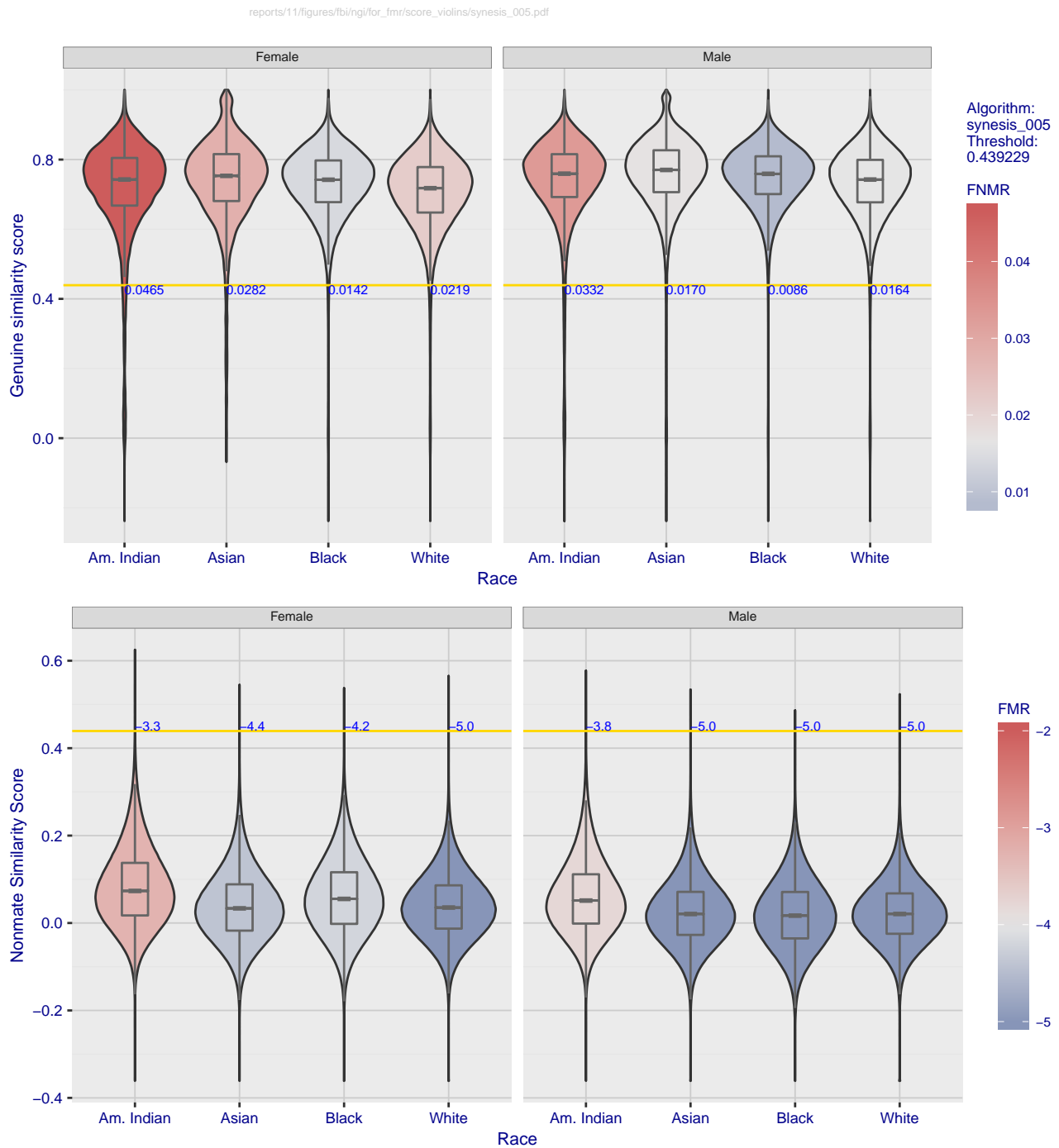


Figure 100: FNMR and FMR score distributions by sex and race, synesis-005. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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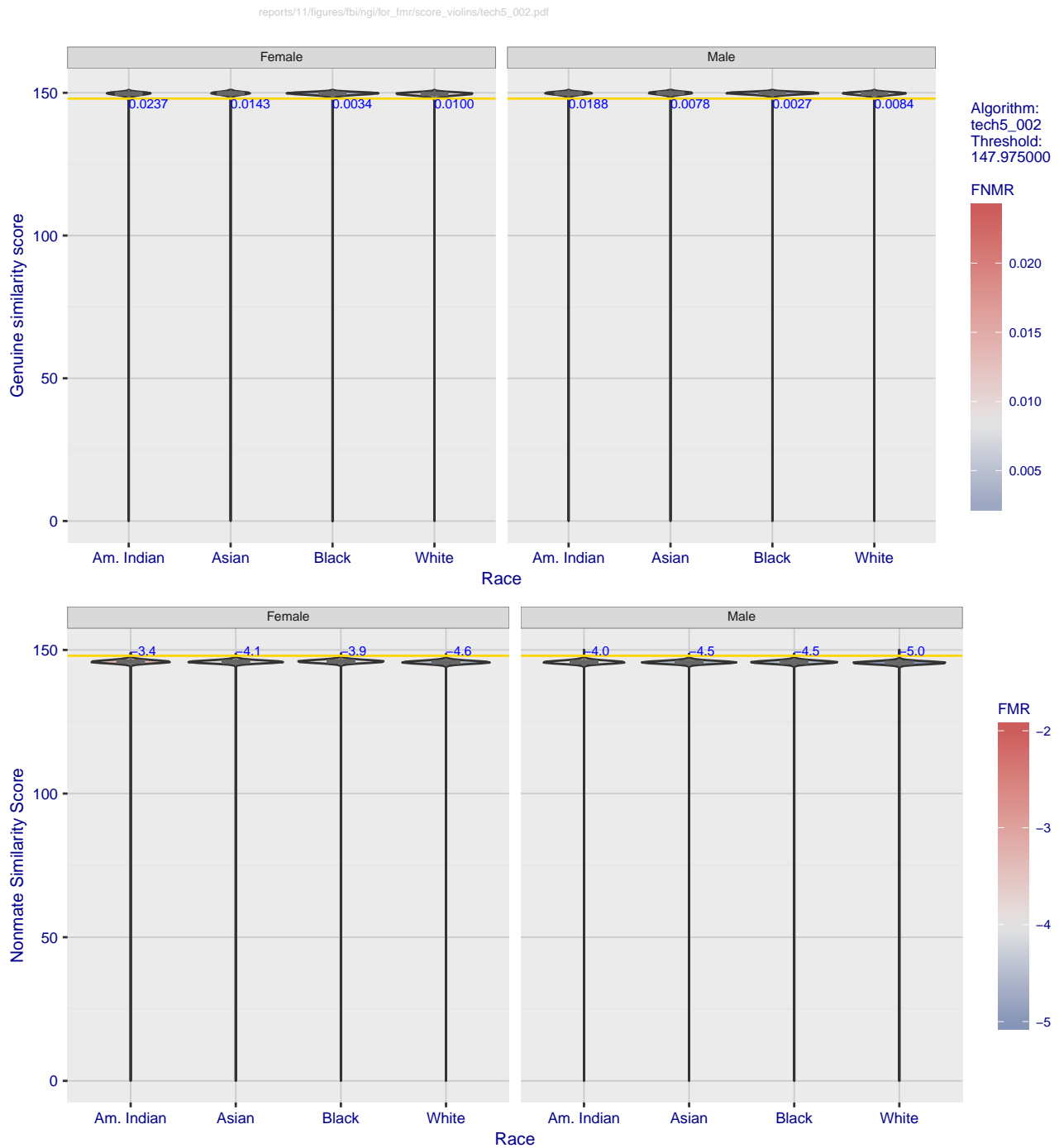


Figure 101: FNMR and FMR score distributions by sex and race, tech5-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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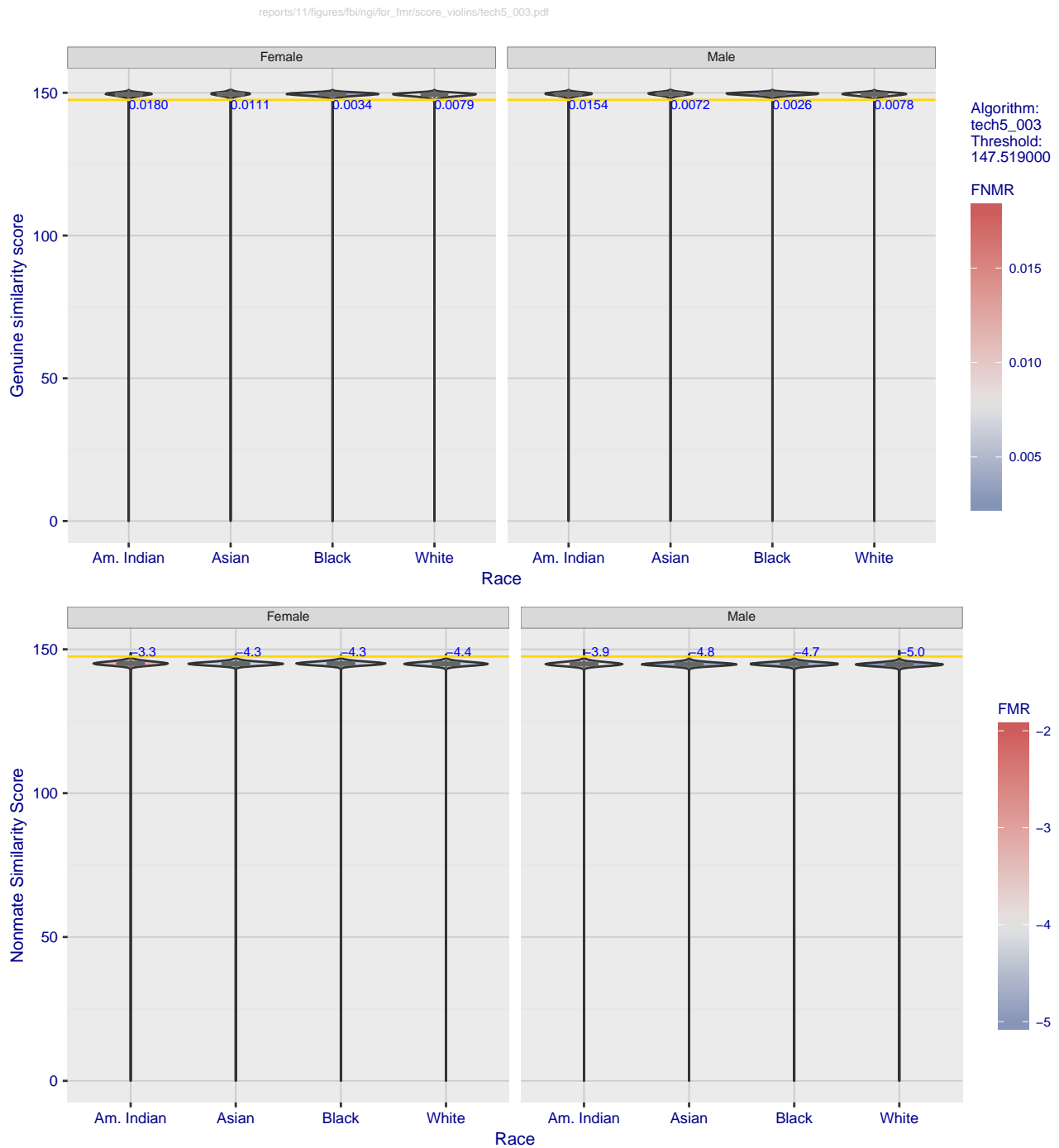


Figure 102: FNMR and FMR score distributions by sex and race, tech5-003. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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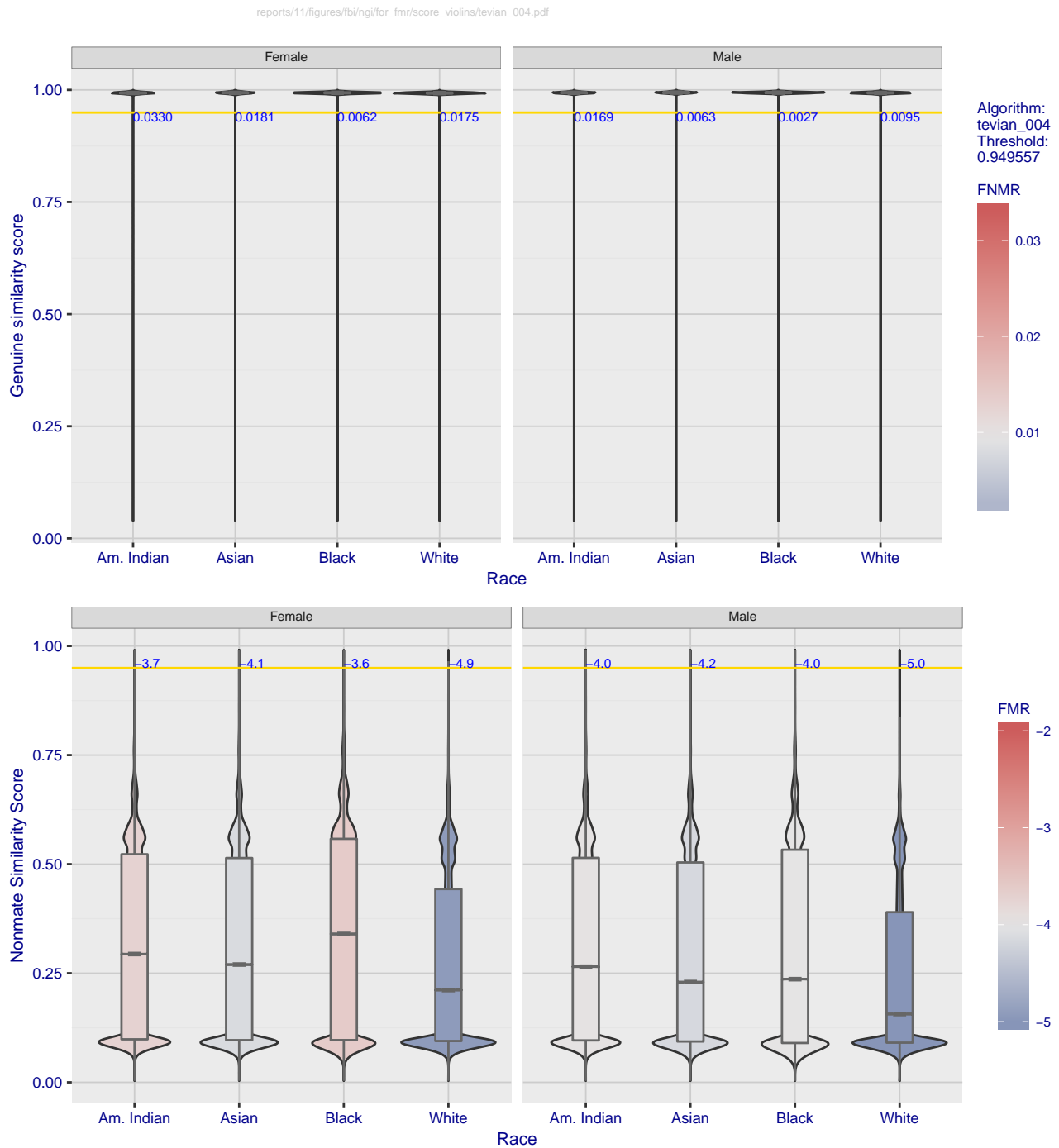


Figure 103: FNMR and FMR score distributions by sex and race, tevian-004. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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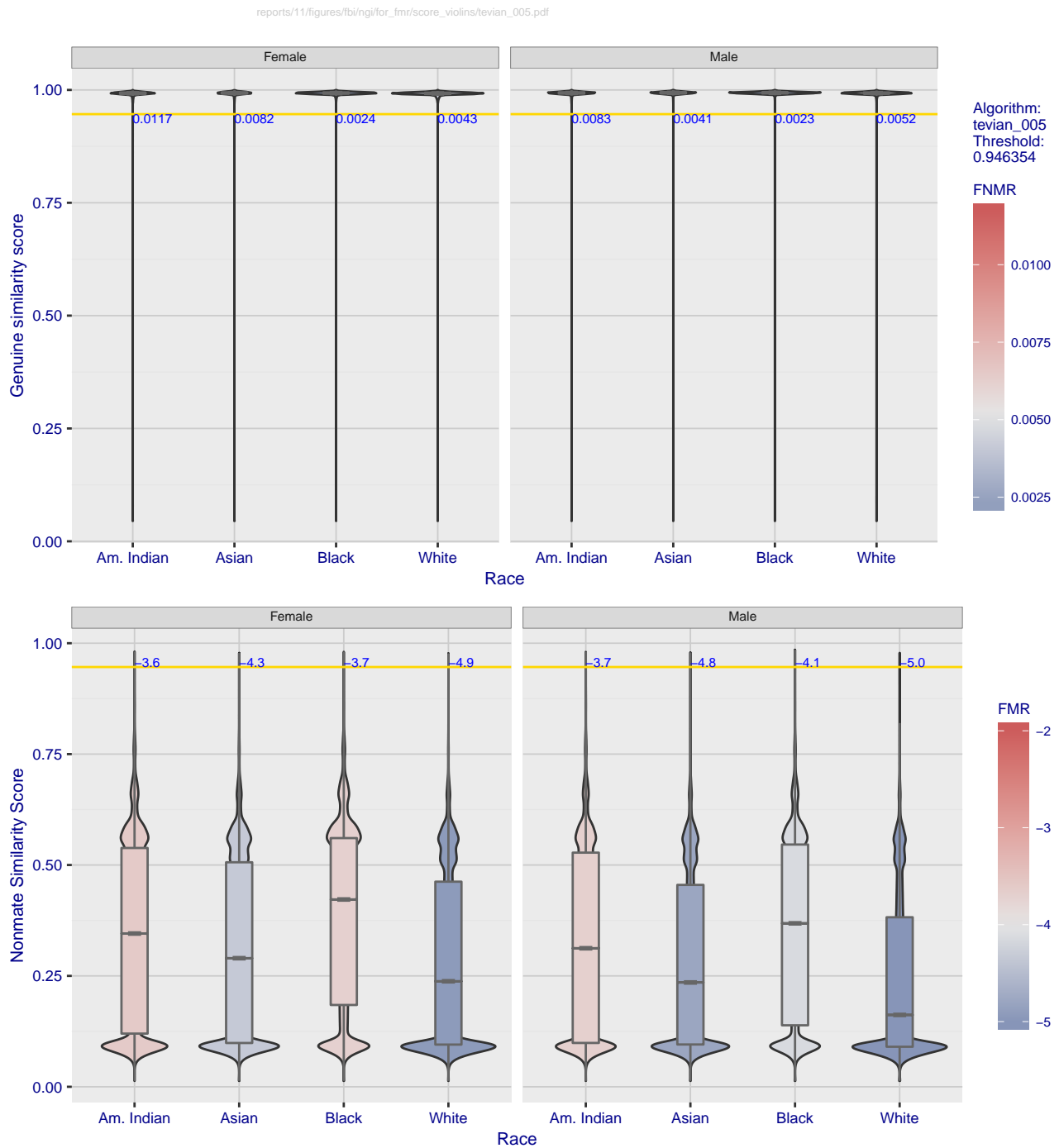


Figure 104: FNMR and FMR score distributions by sex and race, tevian-005. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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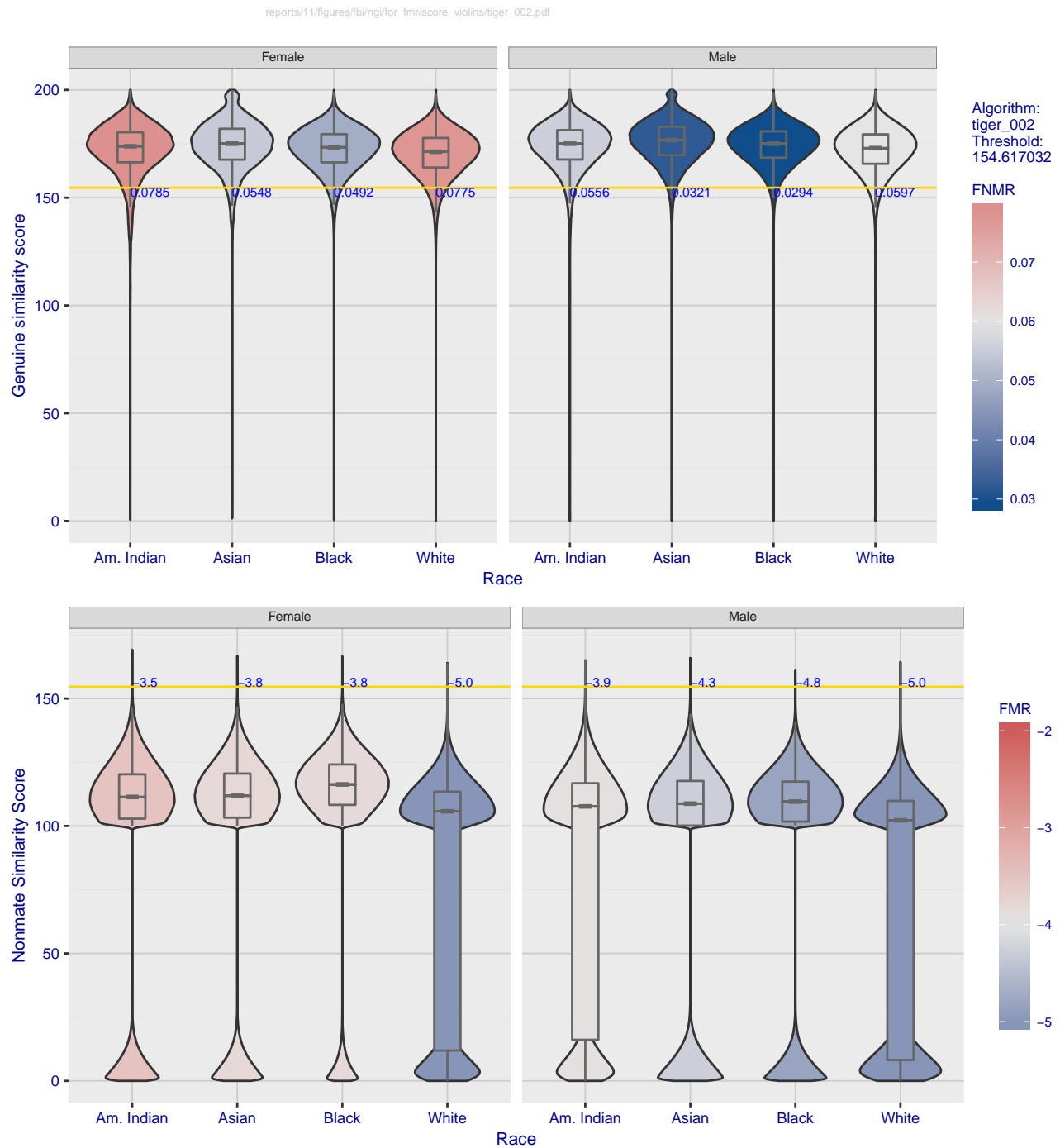


Figure 105: FNMR and FMR score distributions by sex and race, tiger-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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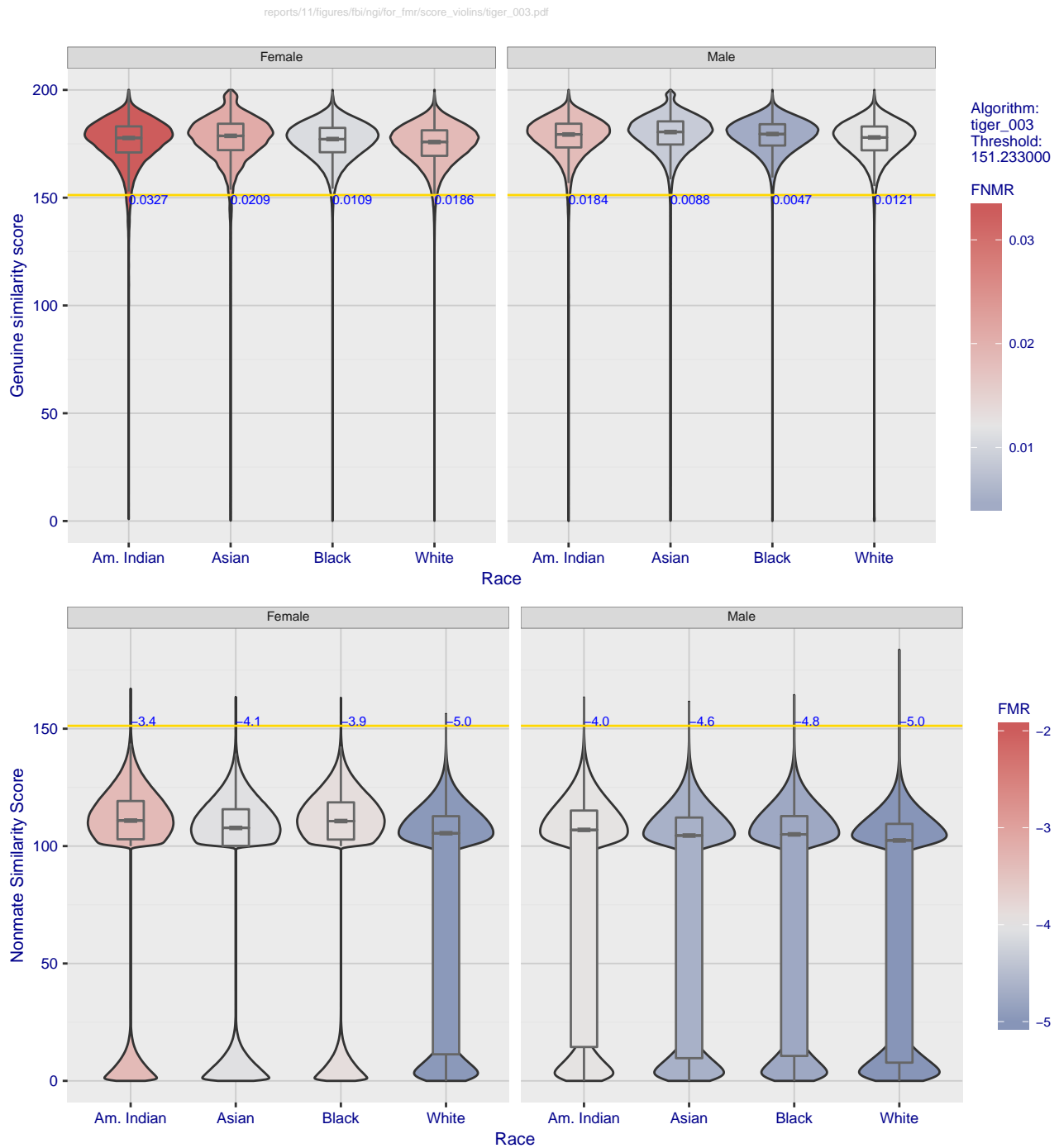


Figure 106: FNMR and FMR score distributions by sex and race, tiger-003. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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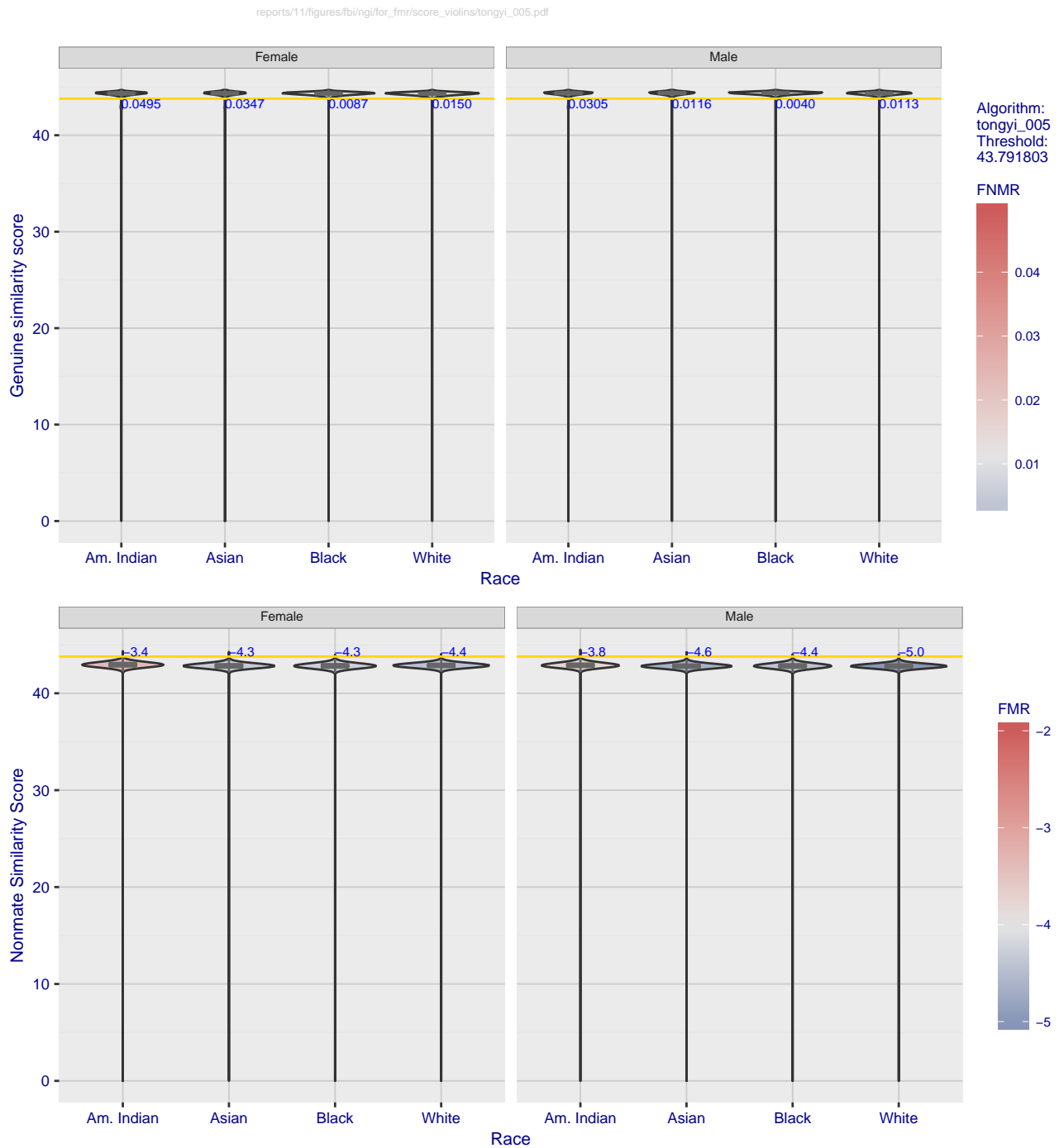


Figure 107: FNMR and FMR score distributions by sex and race, tongyi-005. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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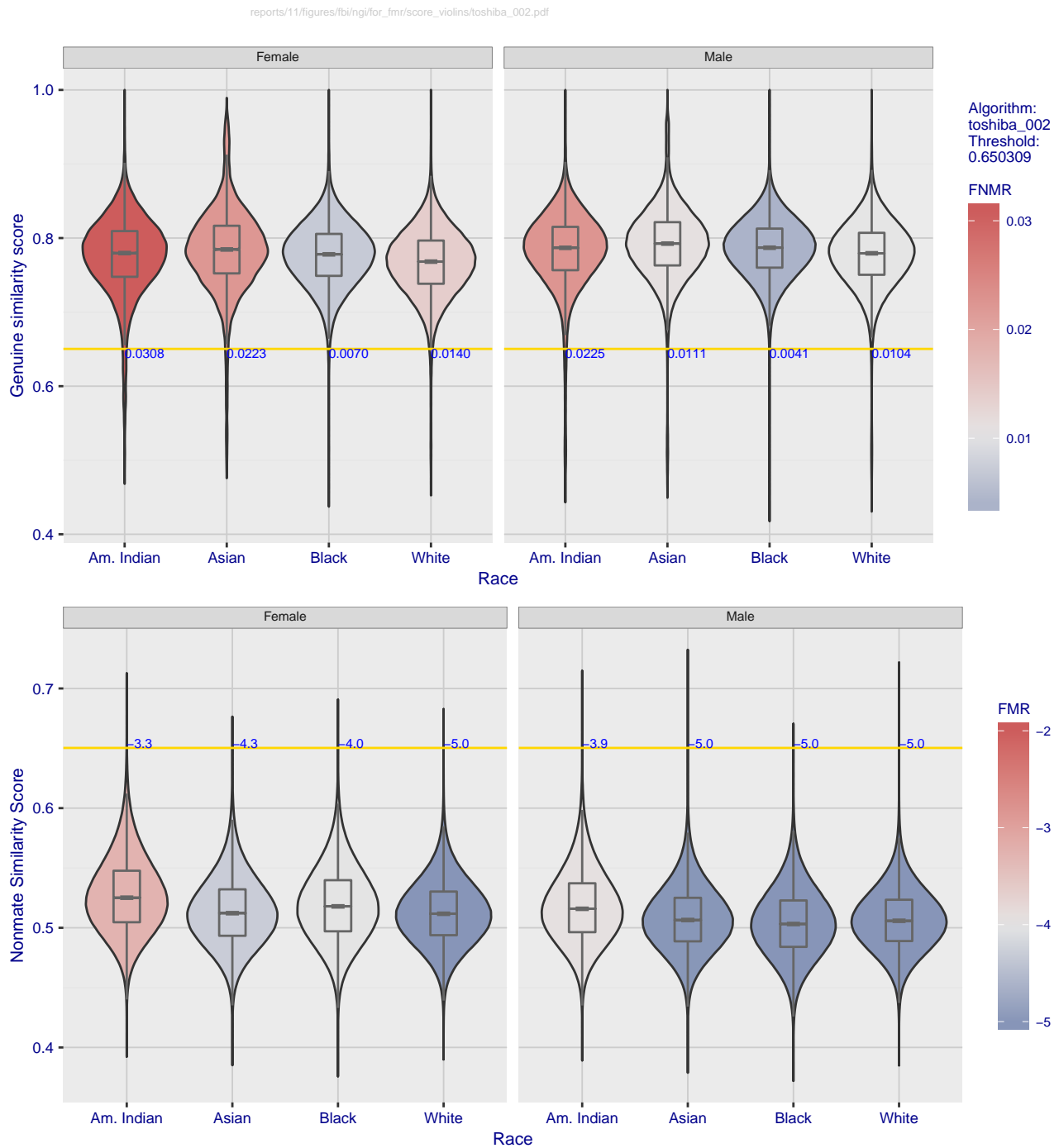


Figure 108: FNMR and FMR score distributions by sex and race, toshiba-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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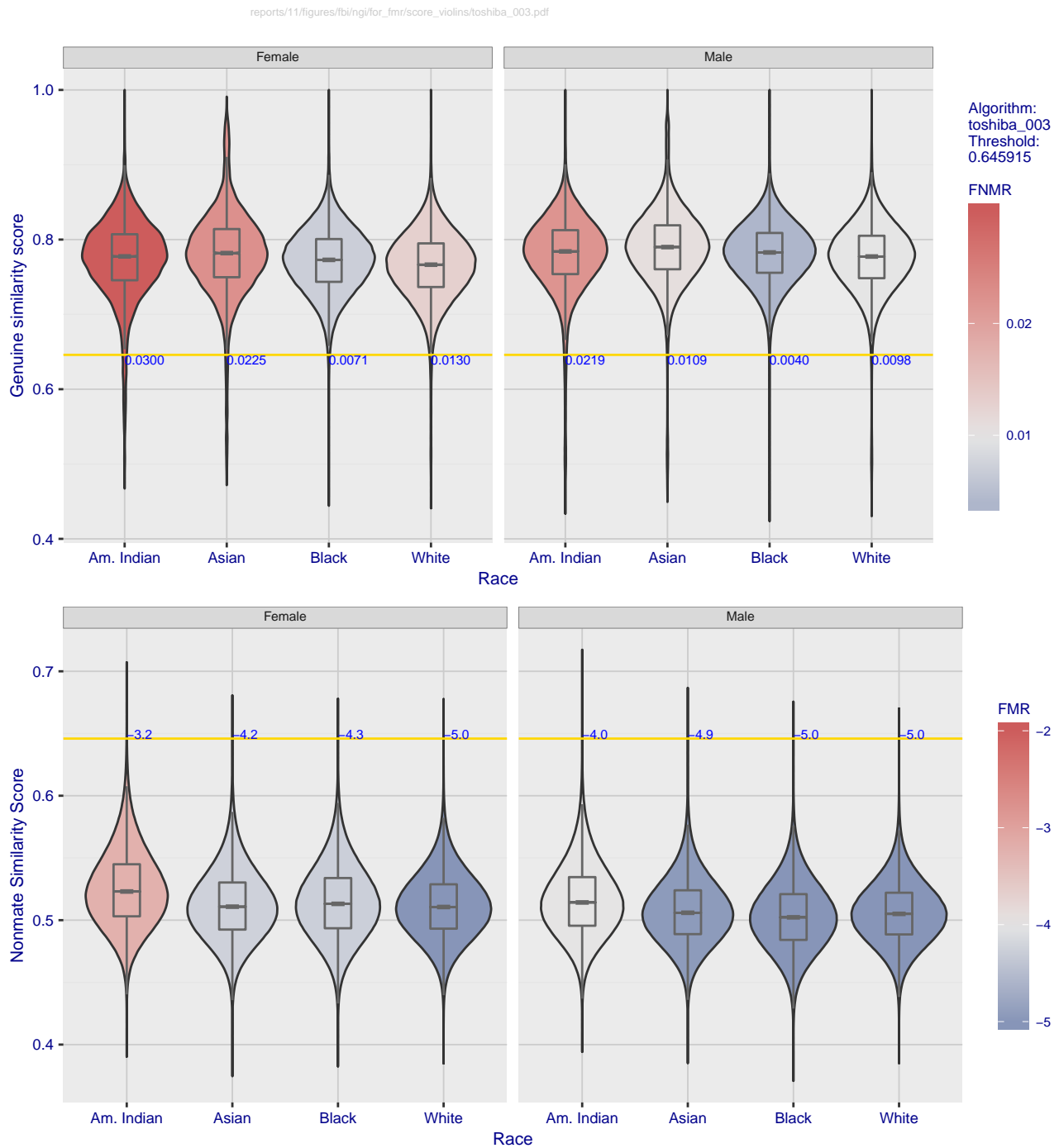


Figure 109: FNMR and FMR score distributions by sex and race, toshiba-003. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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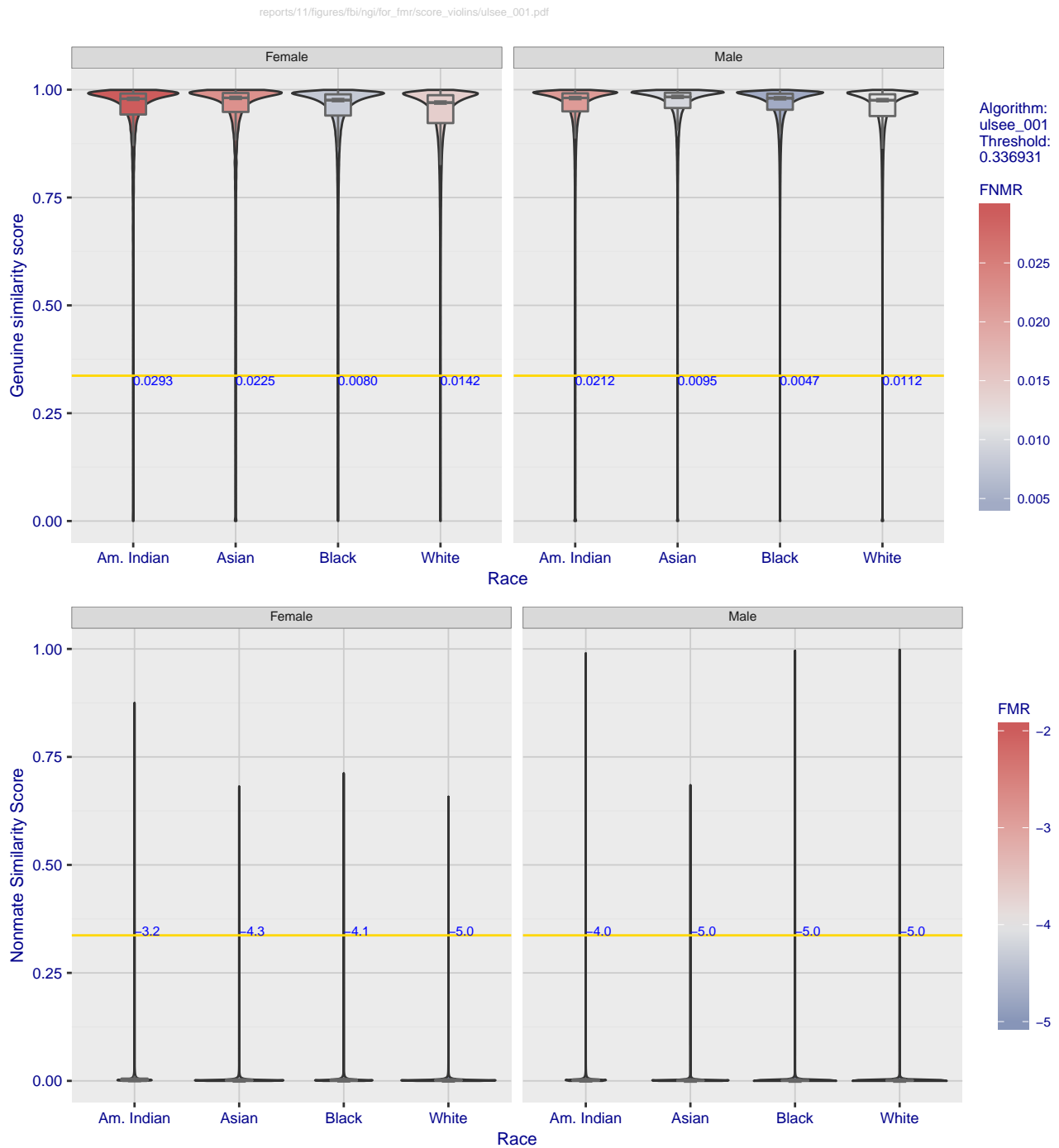


Figure 110: FNMR and FMR score distributions by sex and race, ulsee-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives $FMR = 0.0001$ over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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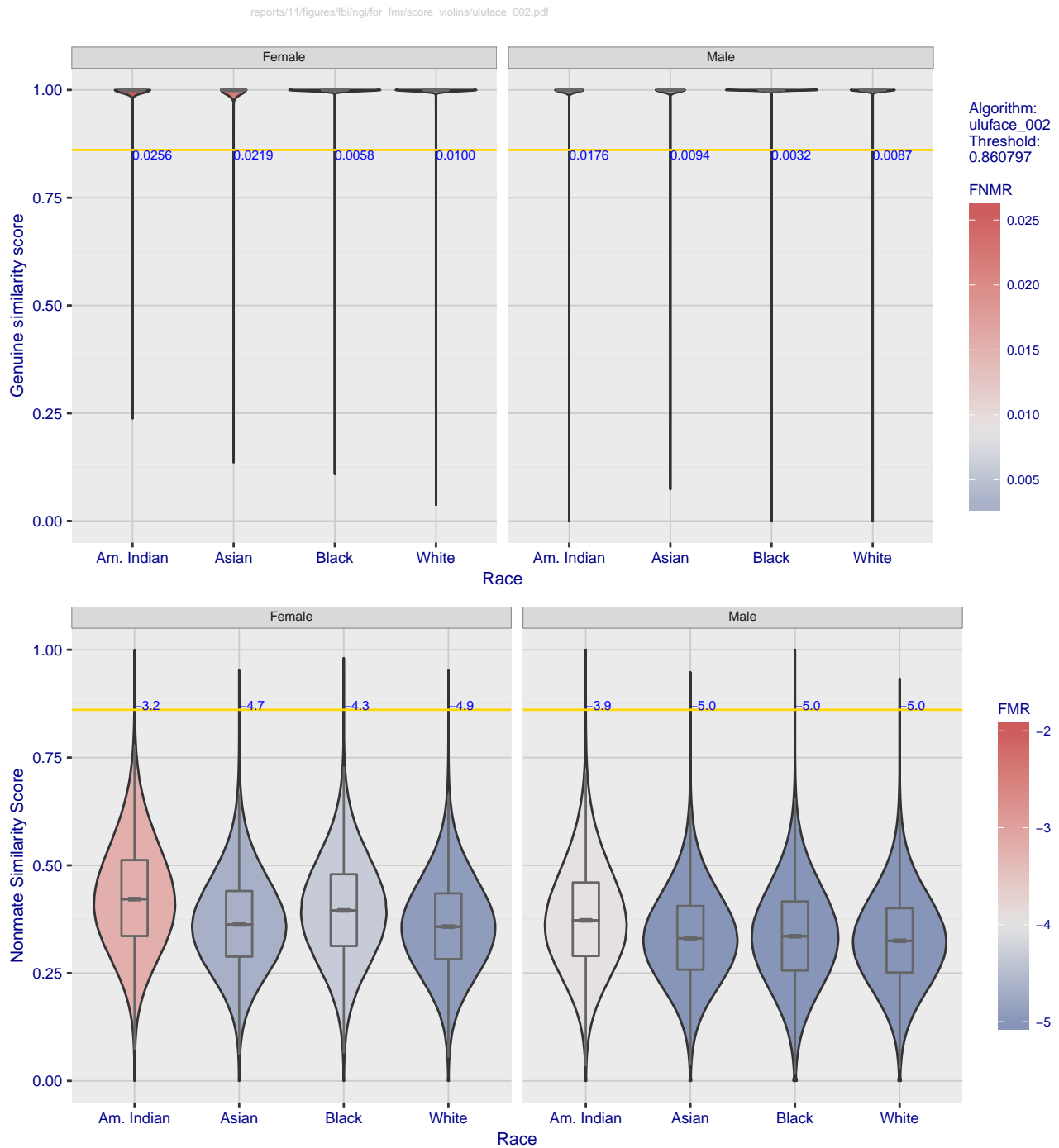


Figure 111: FNMR and FMR score distributions by sex and race, uluface-002. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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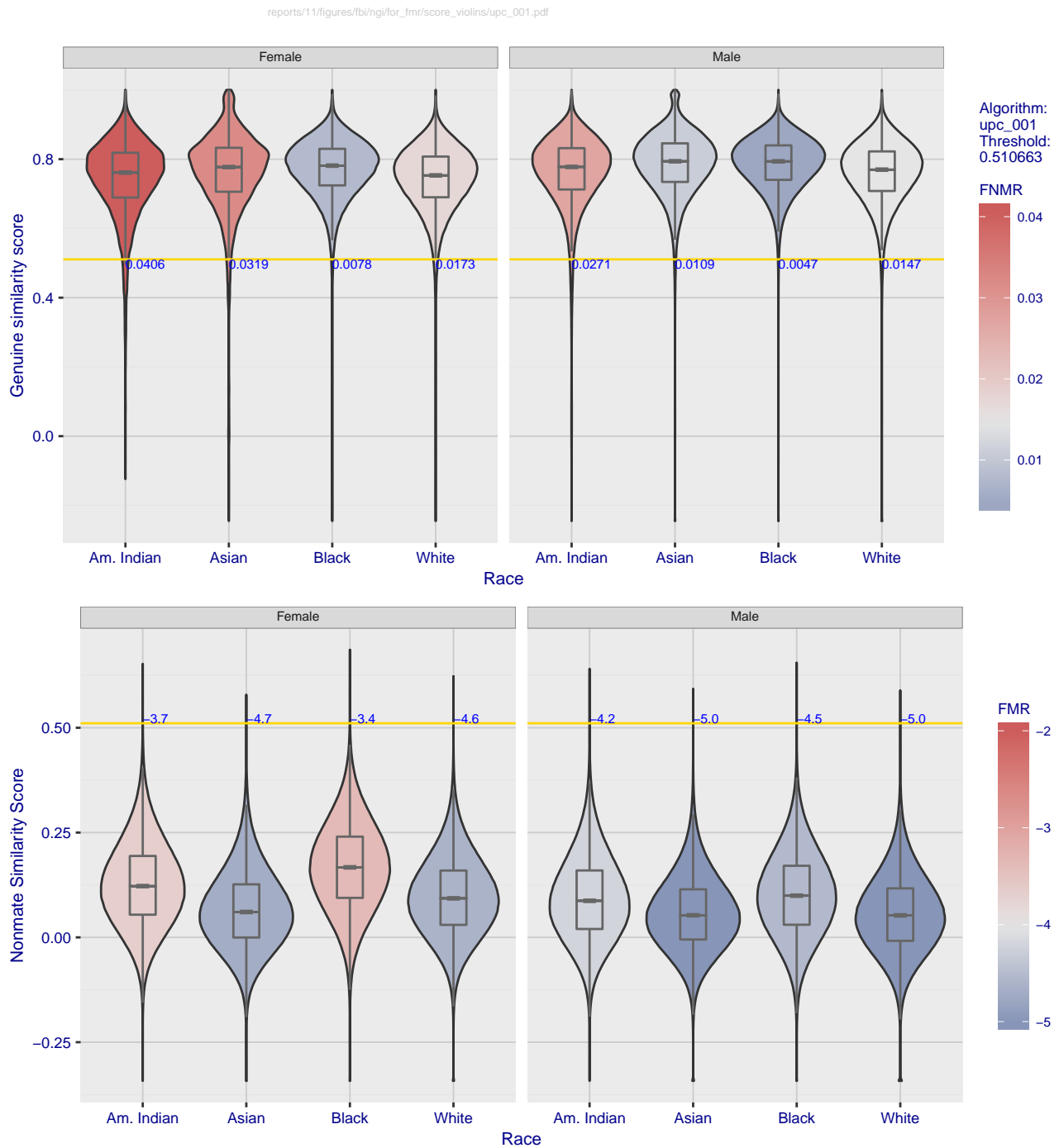


Figure 112: FNMR and FMR score distributions by sex and race, upc-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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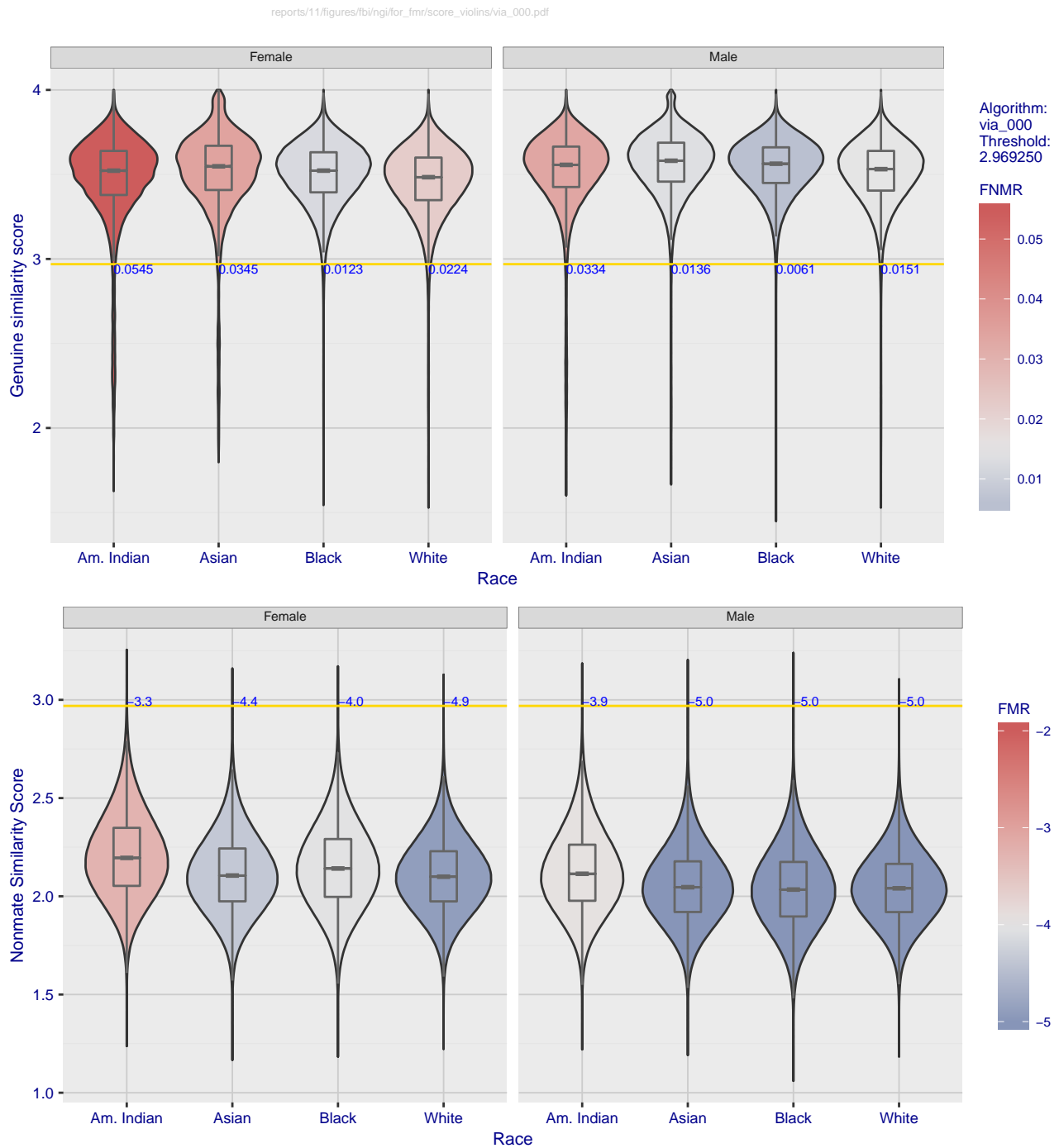


Figure 113: FNMR and FMR score distributions by sex and race, via-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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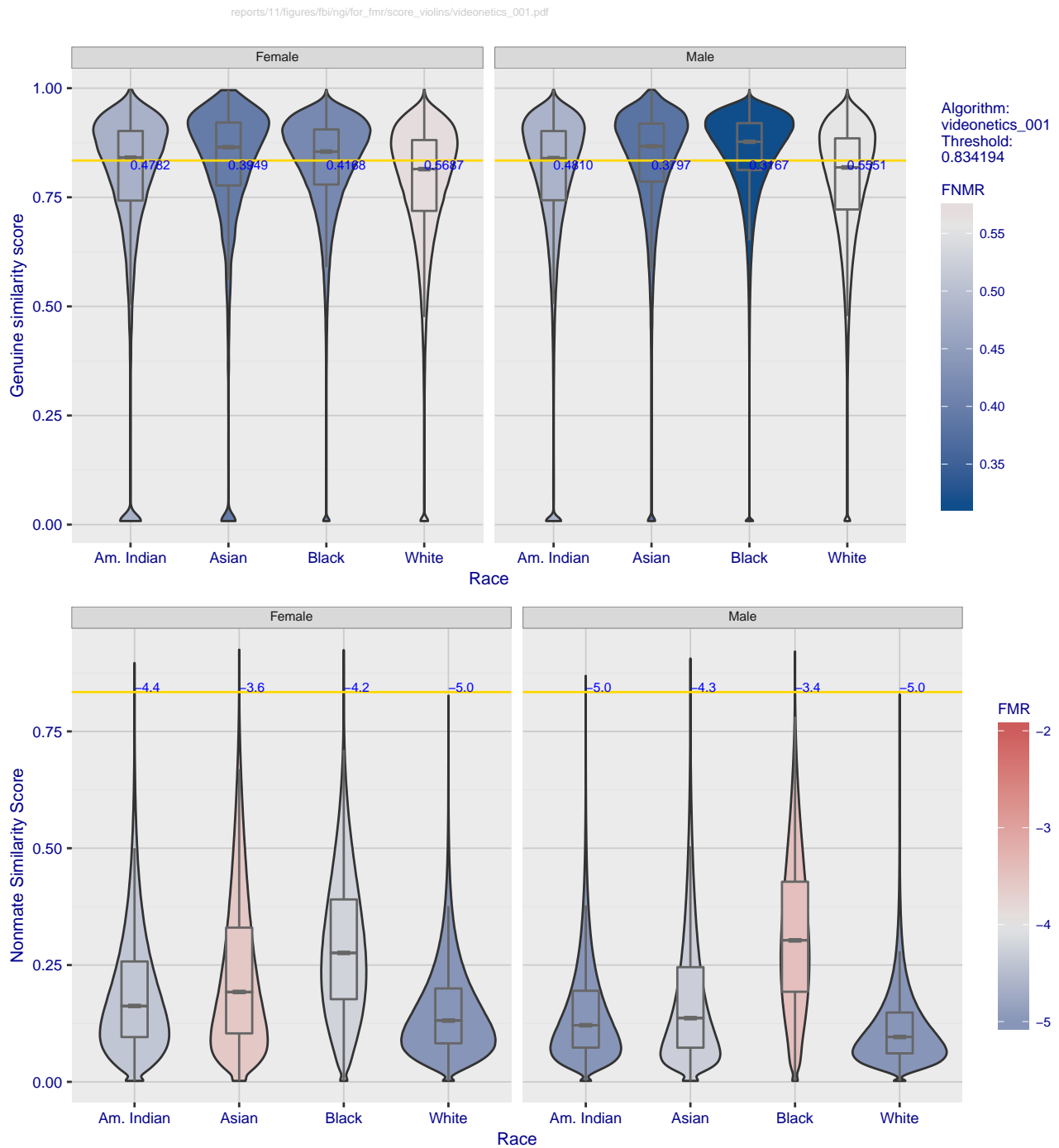


Figure 114: FNMR and FMR score distributions by sex and race, videonetics-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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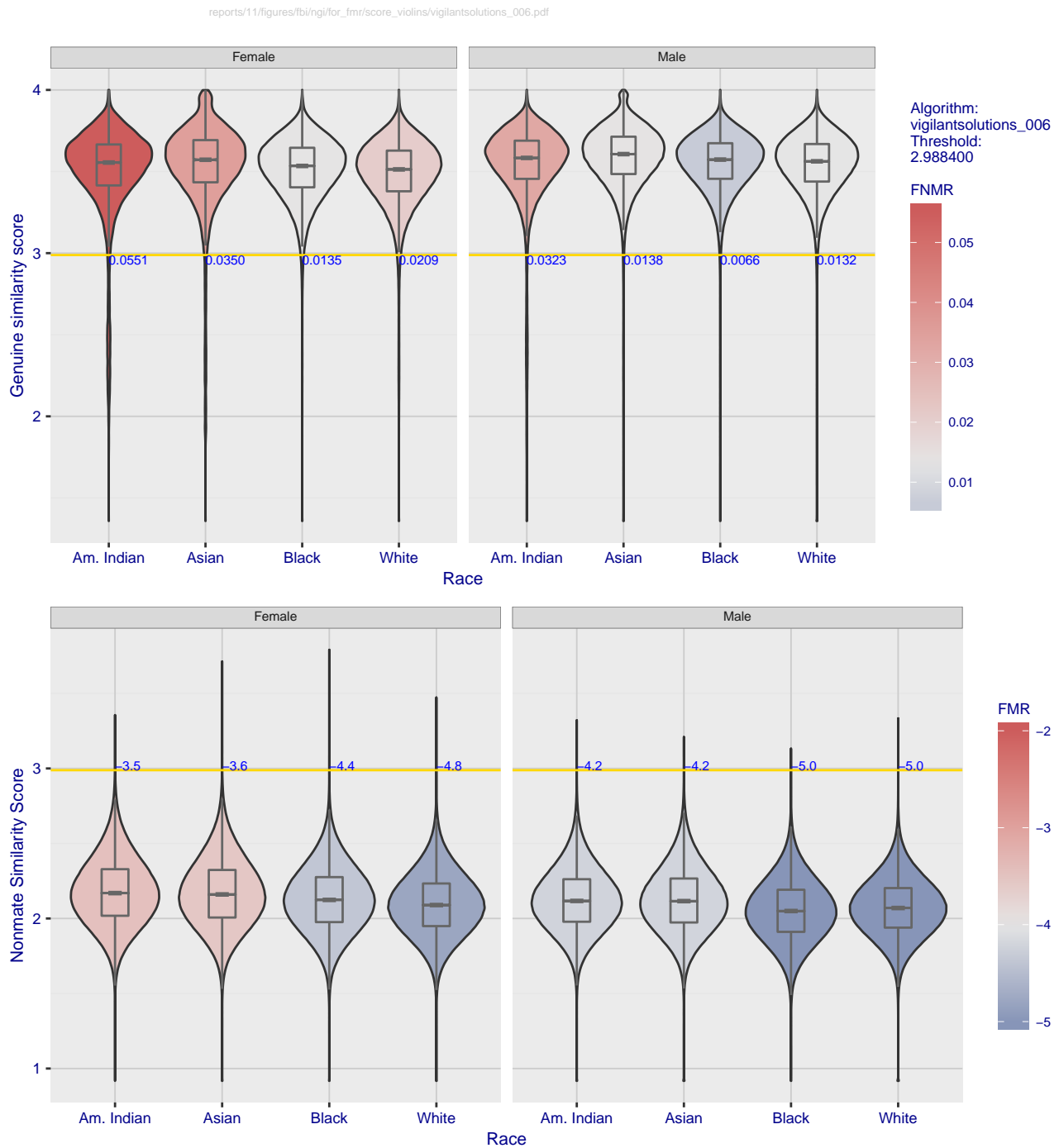


Figure 115: FNMR and FMR score distributions by sex and race, vigilantsolutions-006. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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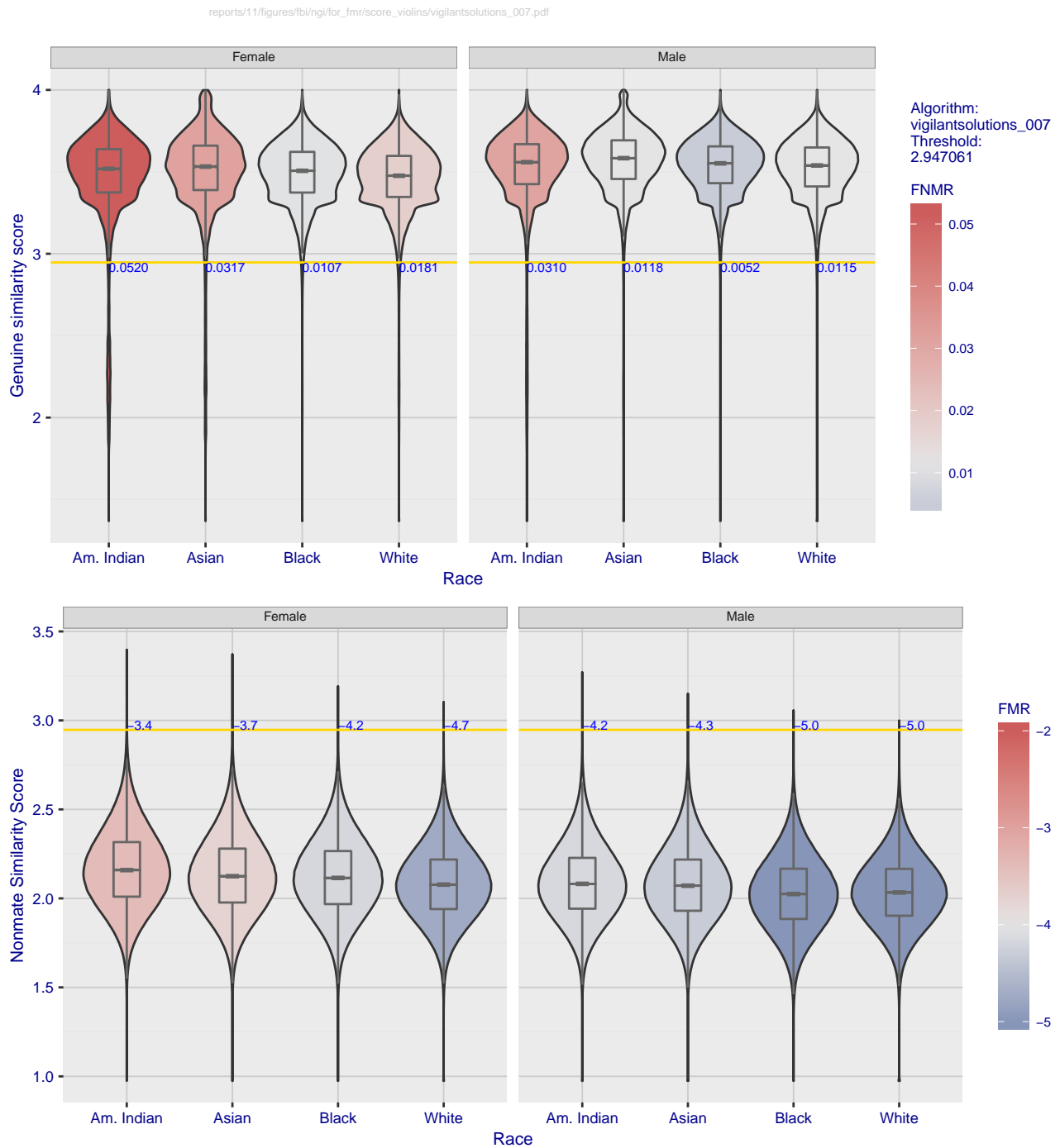


Figure 116: FNMR and FMR score distributions by sex and race, vigilantsolutions-007. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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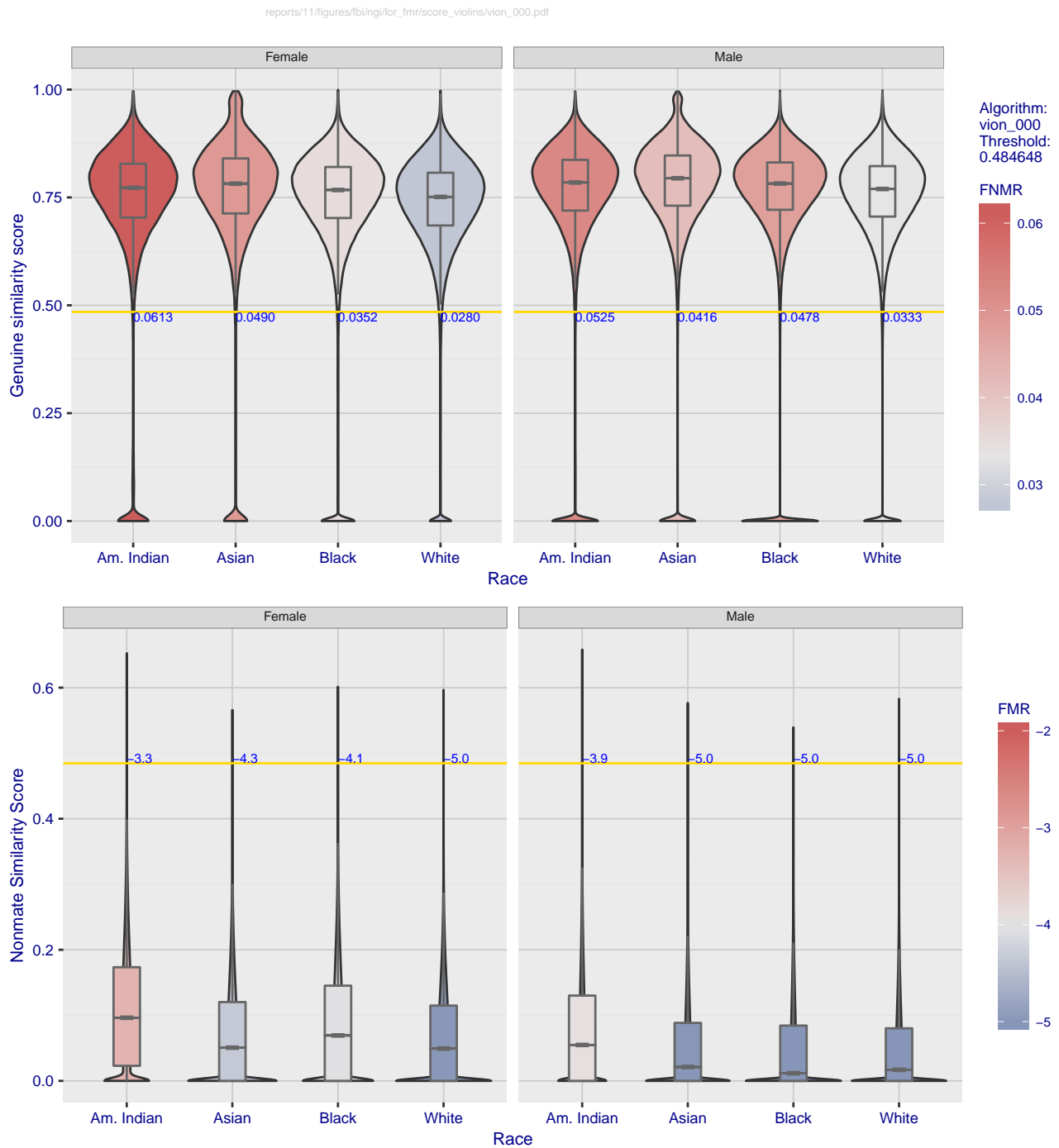


Figure 117: FNMR and FMR score distributions by sex and race, vion-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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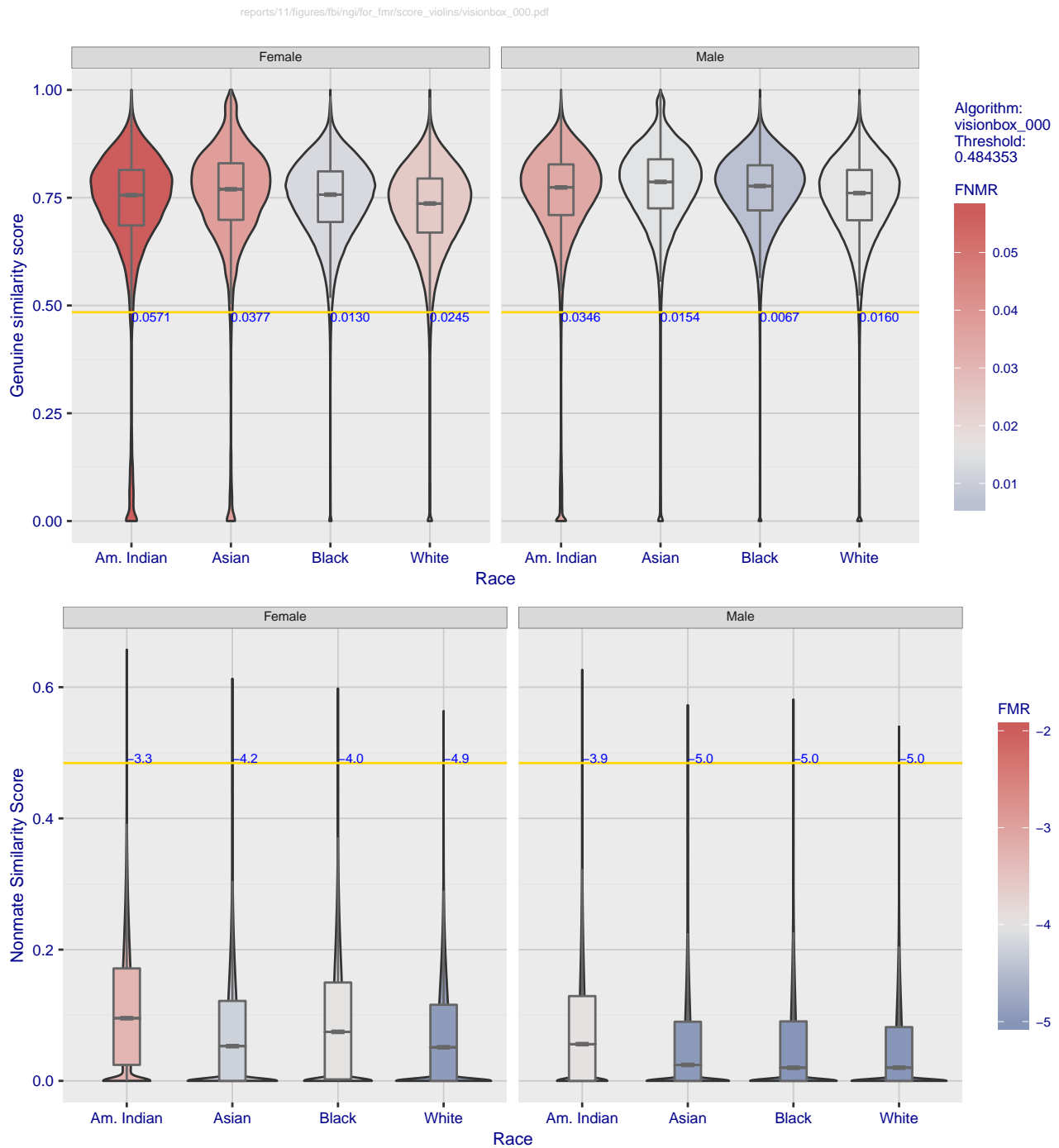


Figure 118: FNMR and FMR score distributions by sex and race, visionbox-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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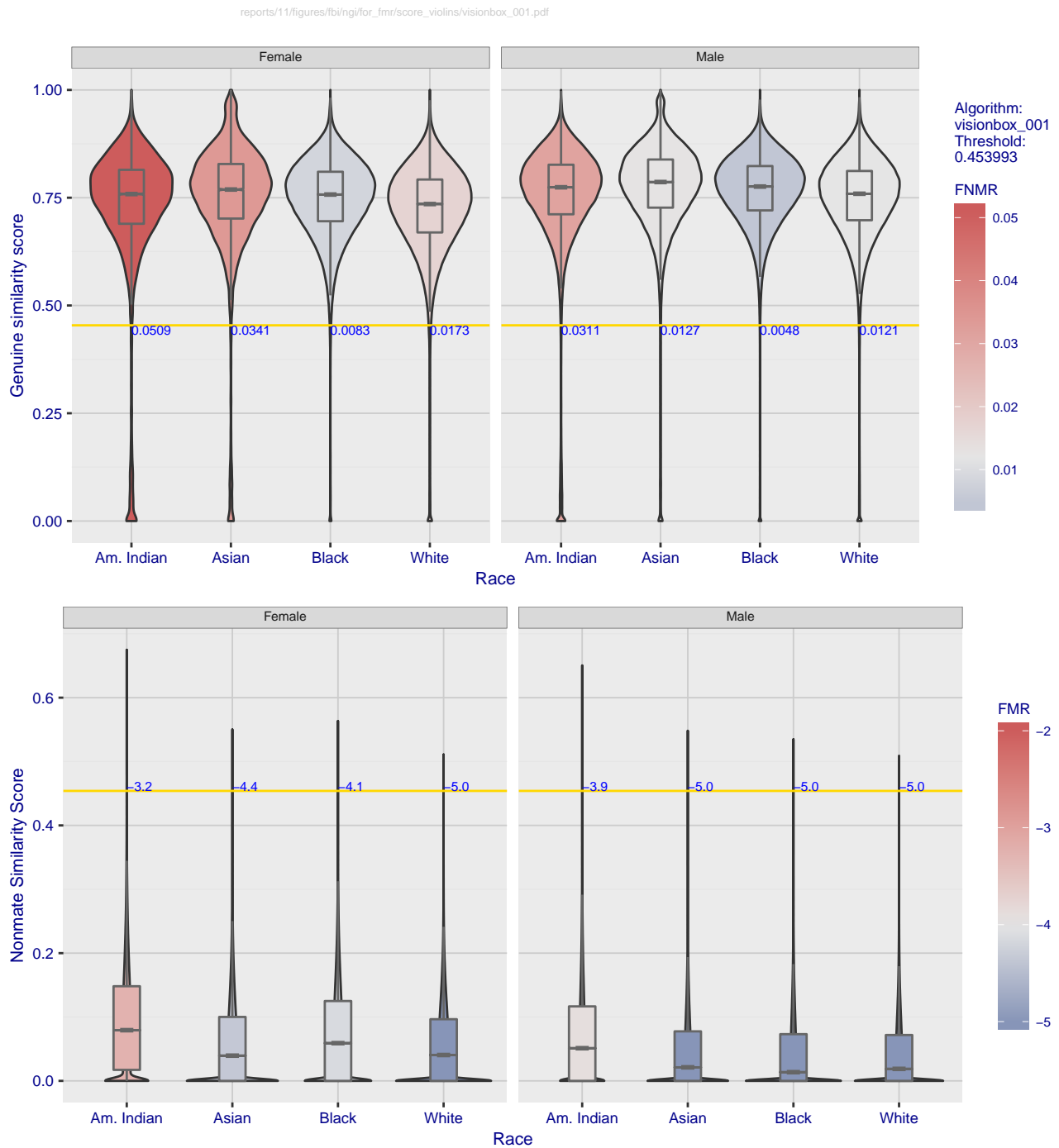


Figure 119: FNMR and FMR score distributions by sex and race, visionbox-001. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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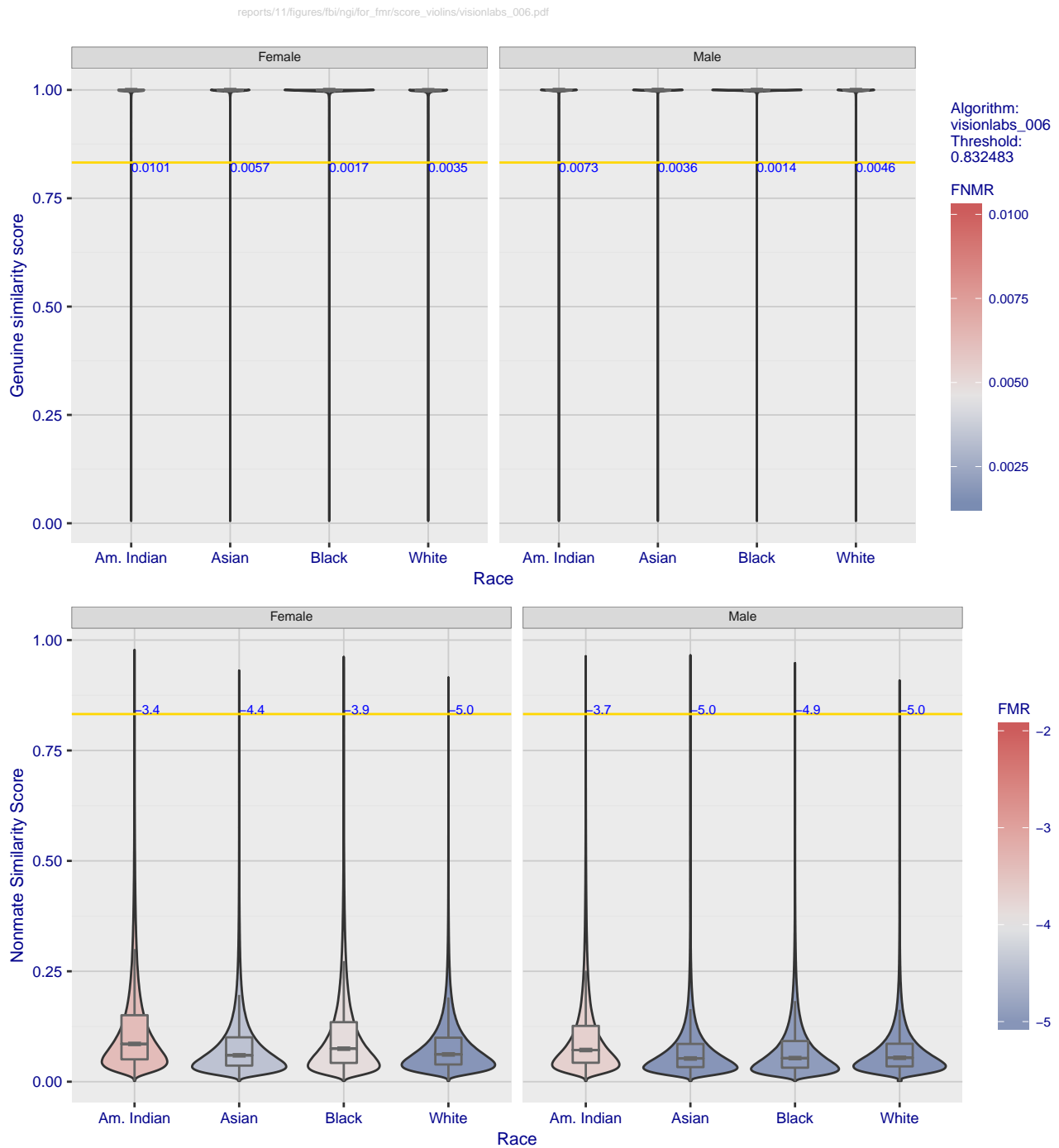


Figure 120: FNMR and FMR score distributions by sex and race, visionlabs-006. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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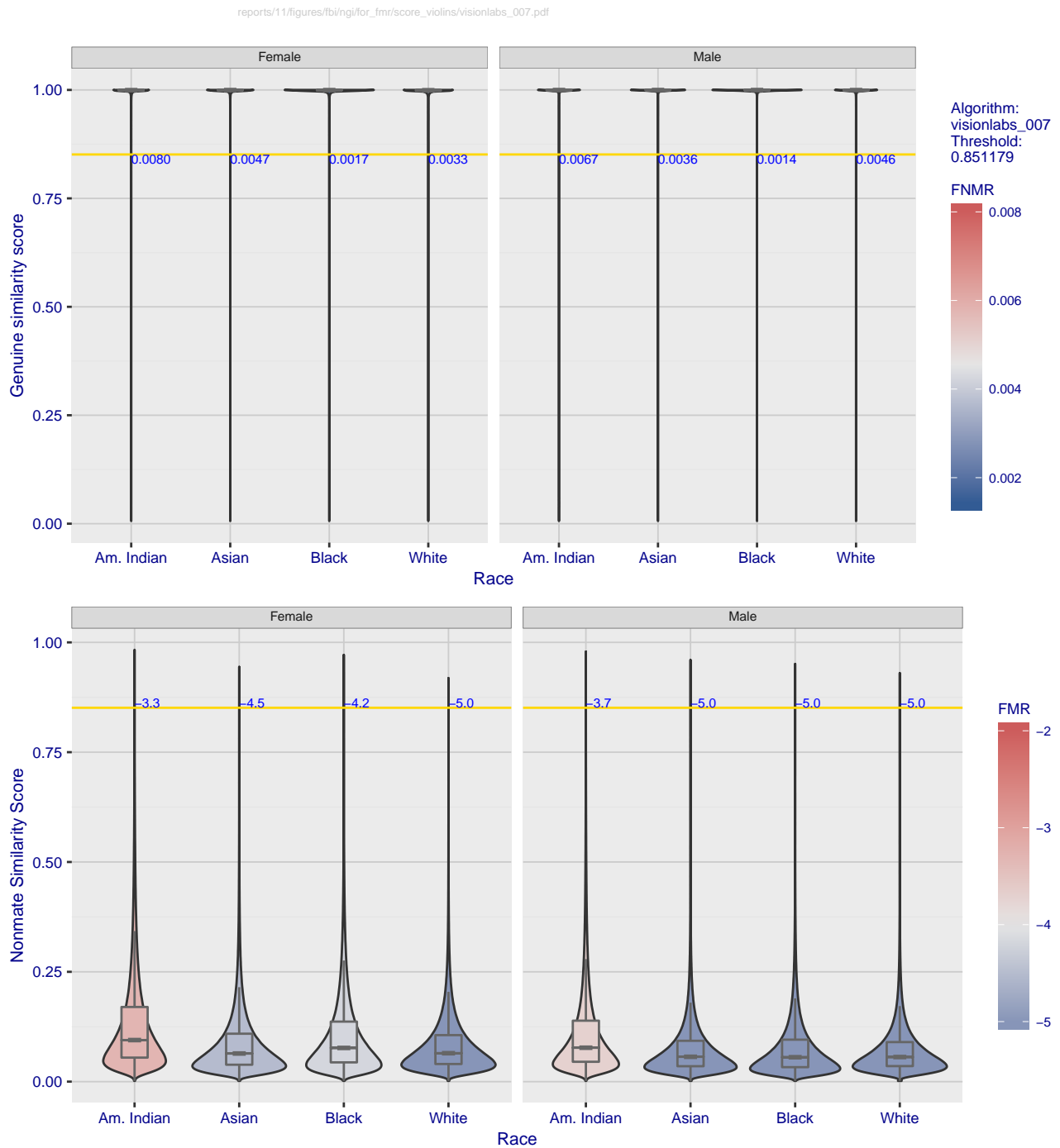


Figure 121: FNMR and FMR score distributions by sex and race, visionlabs-007. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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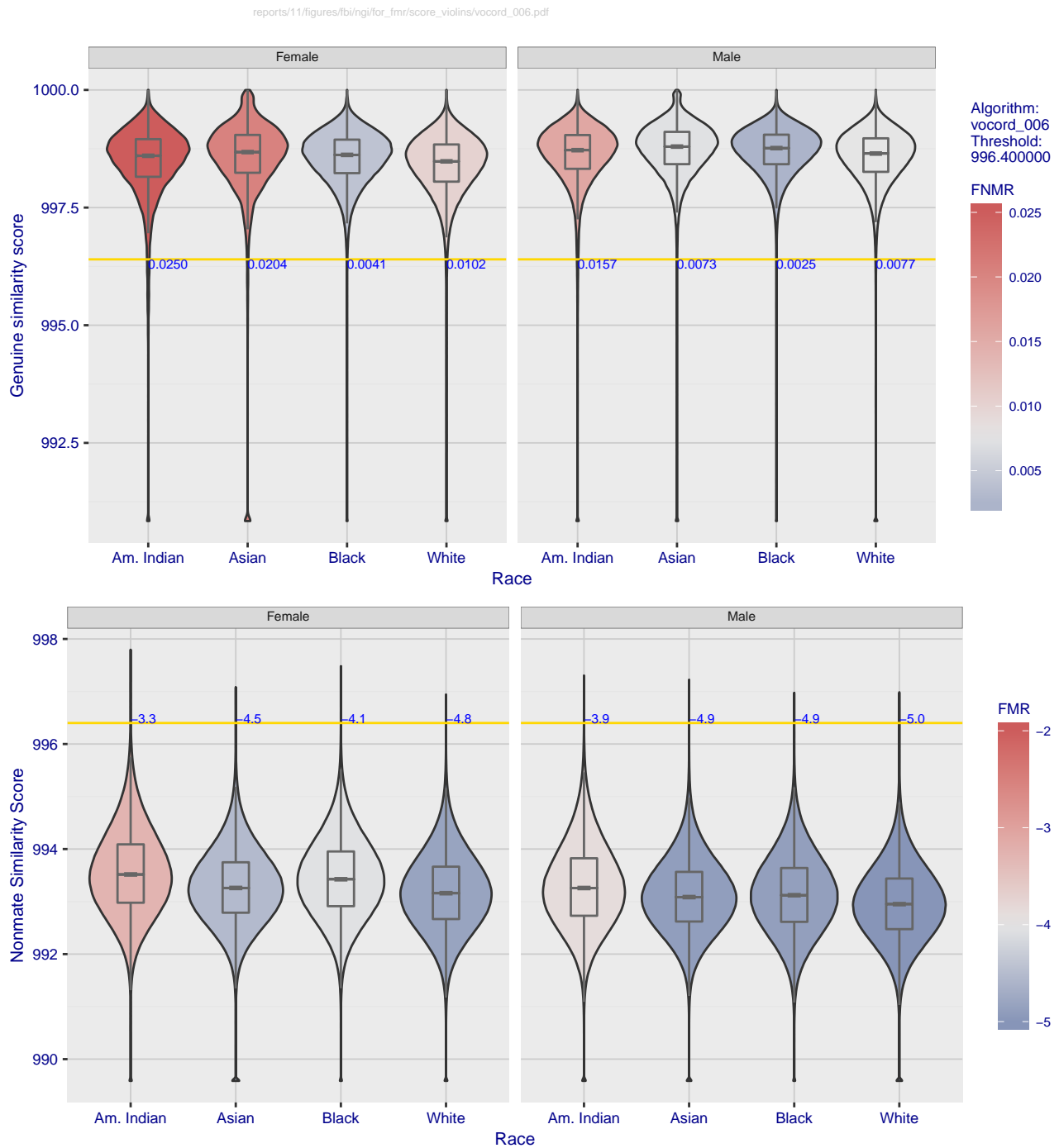


Figure 122: FNMR and FMR score distributions by sex and race, vocord-006. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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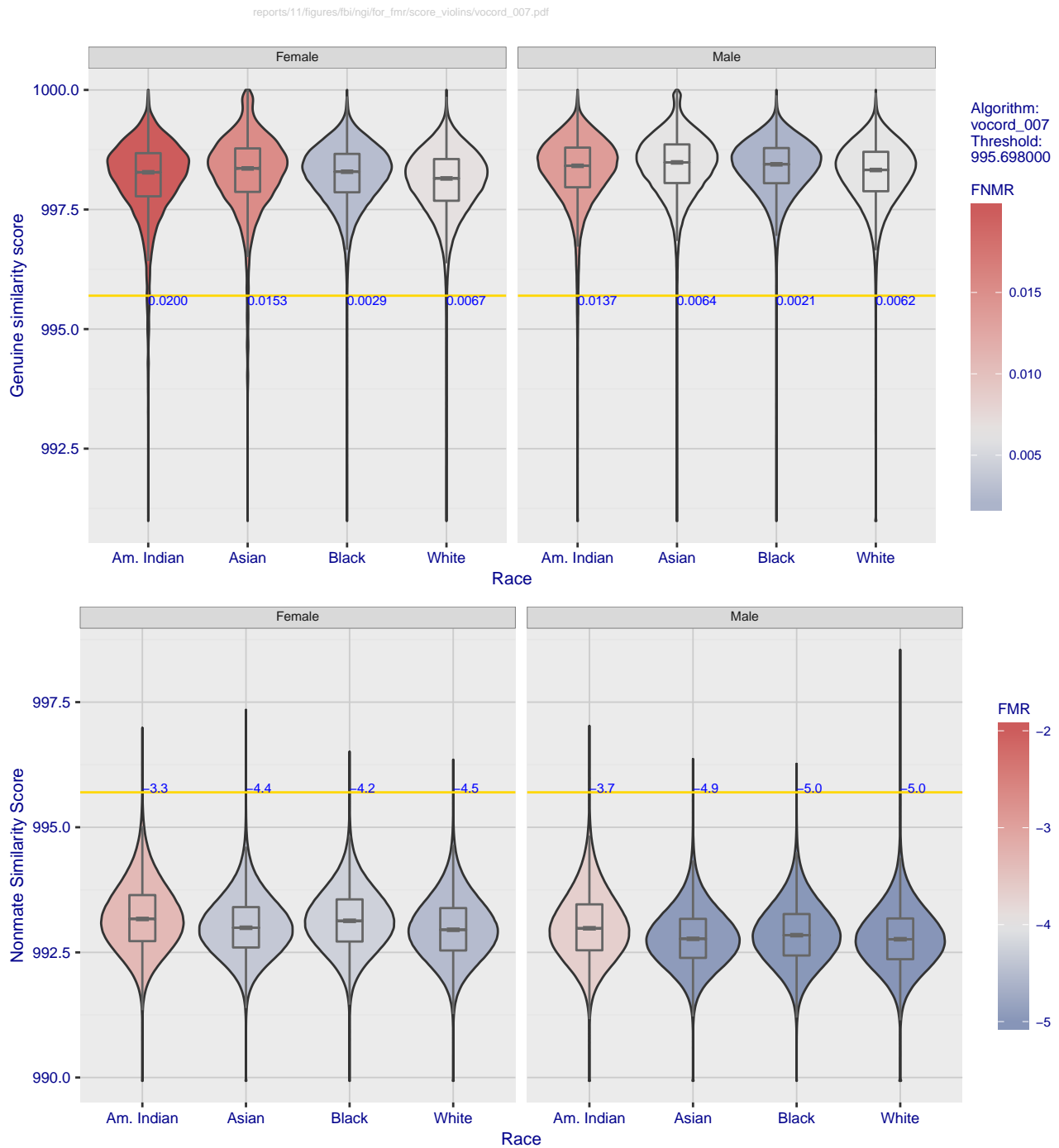


Figure 123: FNMR and FMR score distributions by sex and race, vocord-007. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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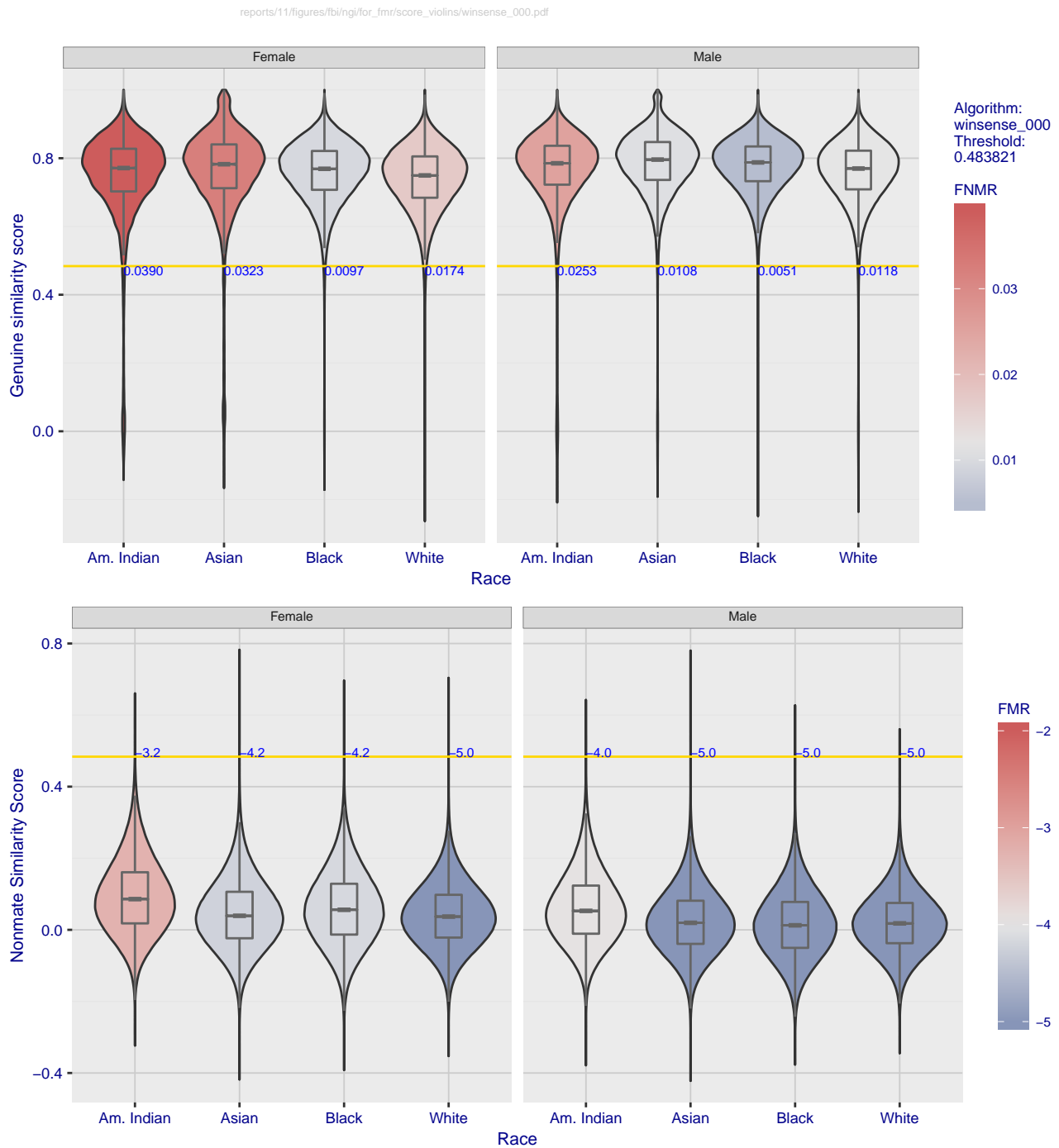


Figure 124: FNMR and FMR score distributions by sex and race, winsense-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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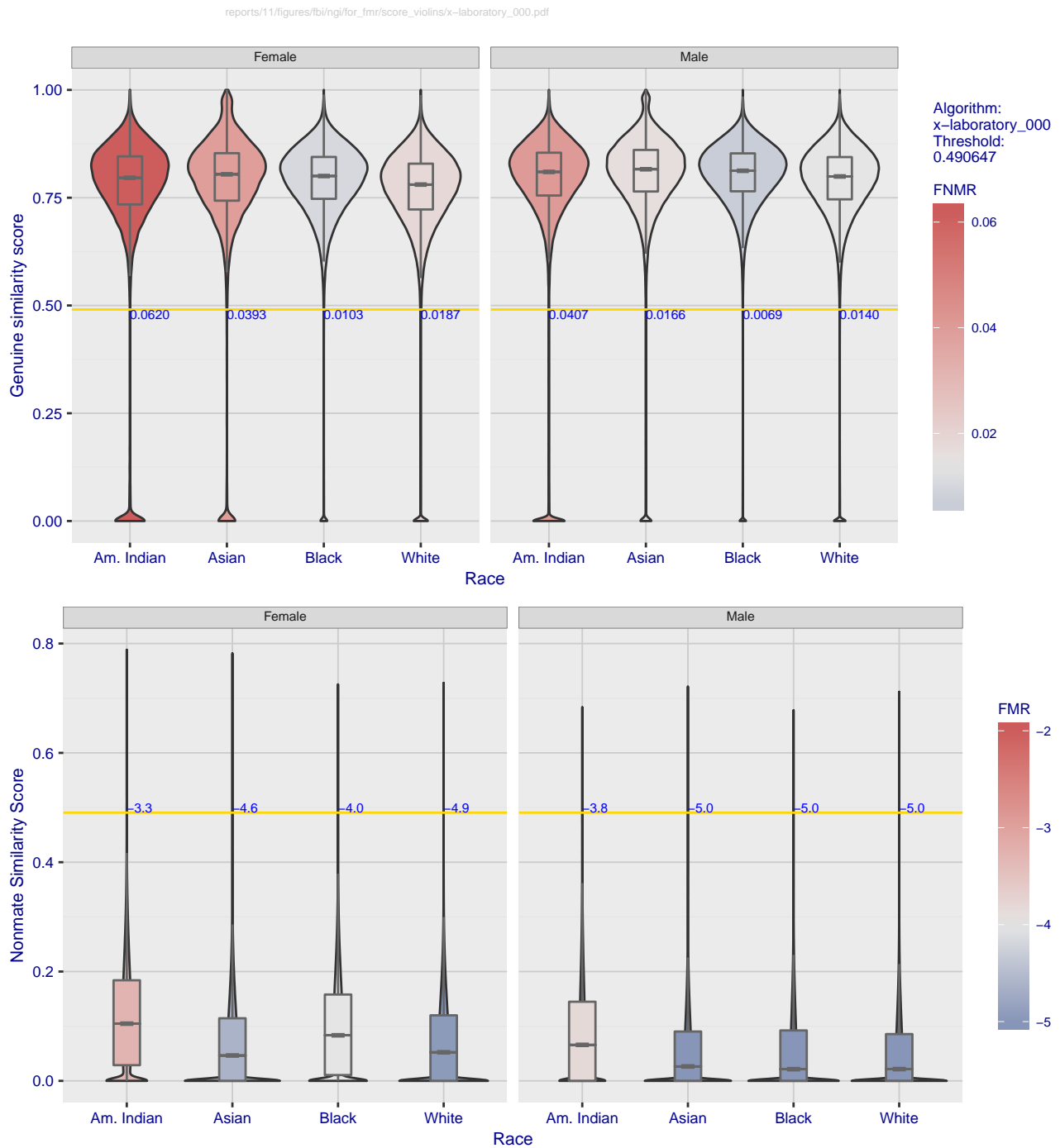


Figure 125: FNMR and FMR score distributions by sex and race, x-laboratory-000. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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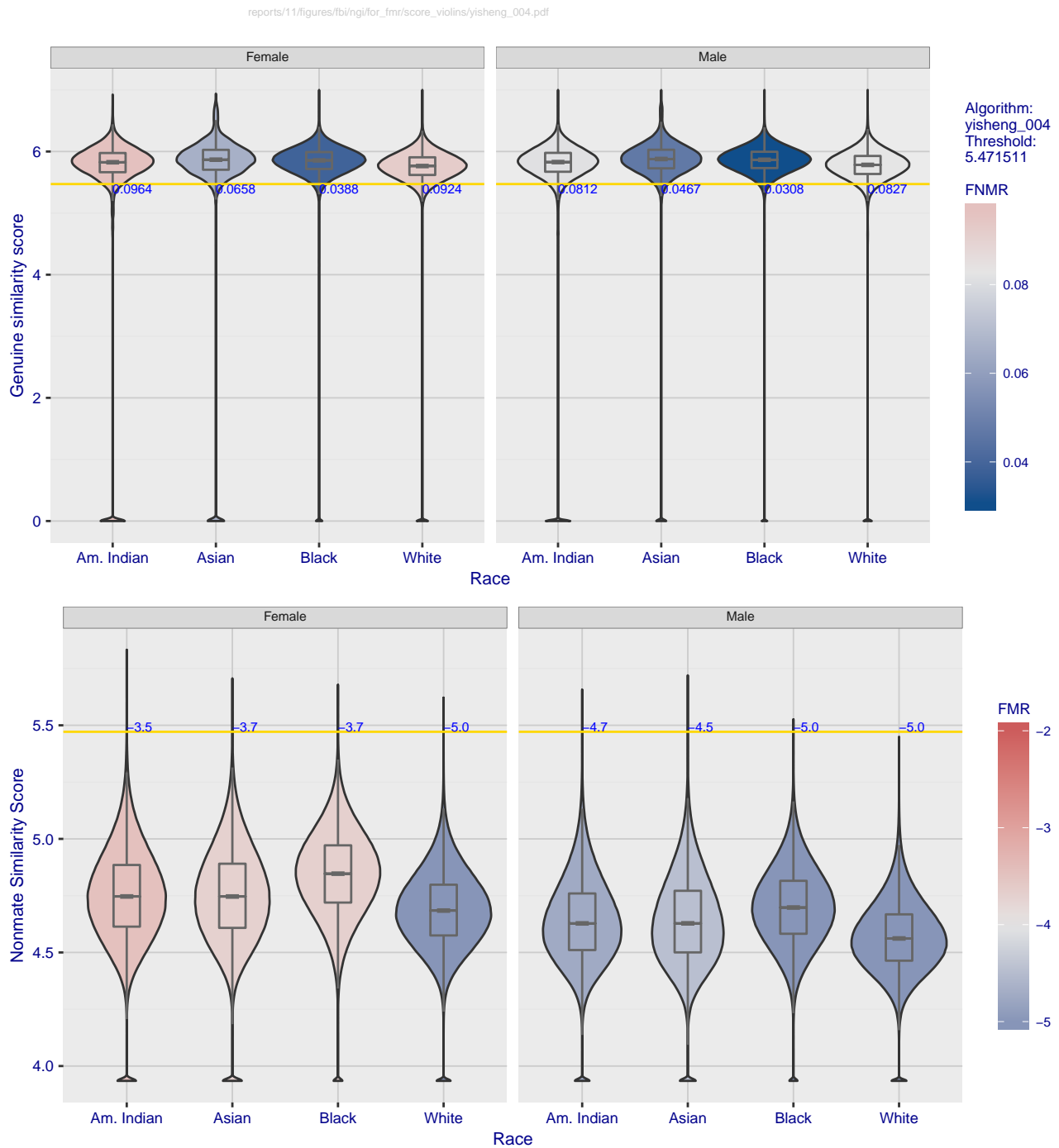


Figure 126: FNMR and FMR score distributions by sex and race, yisheng-004. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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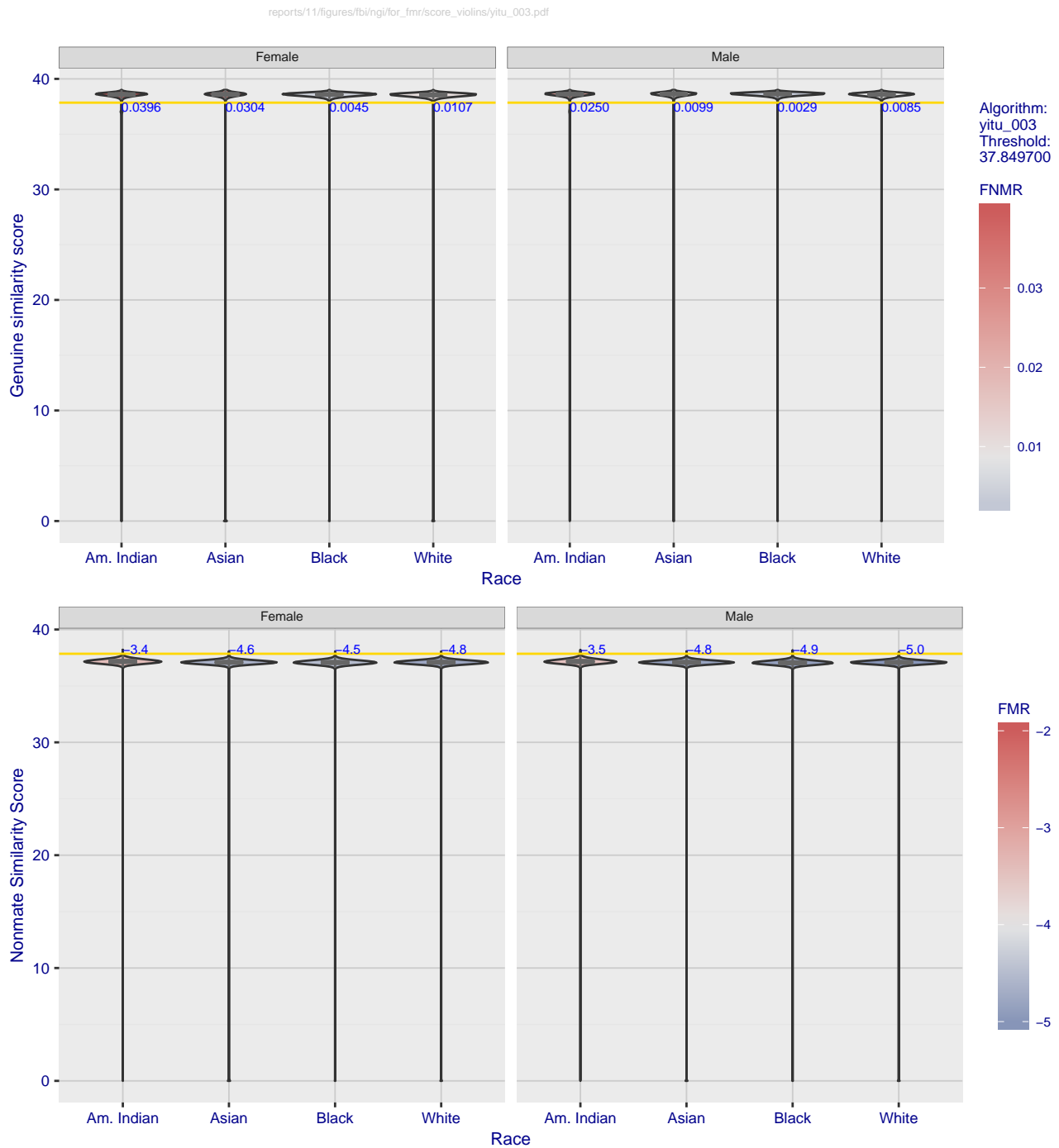


Figure 127: FNMR and FMR score distributions by sex and race, yitu-003. The violin plots show native similarity score distributions. The horizontal line shows the threshold that gives FMR = 0.0001 over all the impostor pairs. The impostors have the same sex and race. The upper figure shows genuine scores and the color indicates FNMR at the given threshold on a linear scale. The lower figure shows impostor scores with color indicating FMR on a logarithmic scale. FMR values below 10^{-5} are pinned to that value.

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