

Participant Results

Proprietary Fingerprint Template Evaluation II (PFT-II)

Participant 4C — Neurotechnology

Image Group

Information Access Division

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1 1K Sample Evaluation

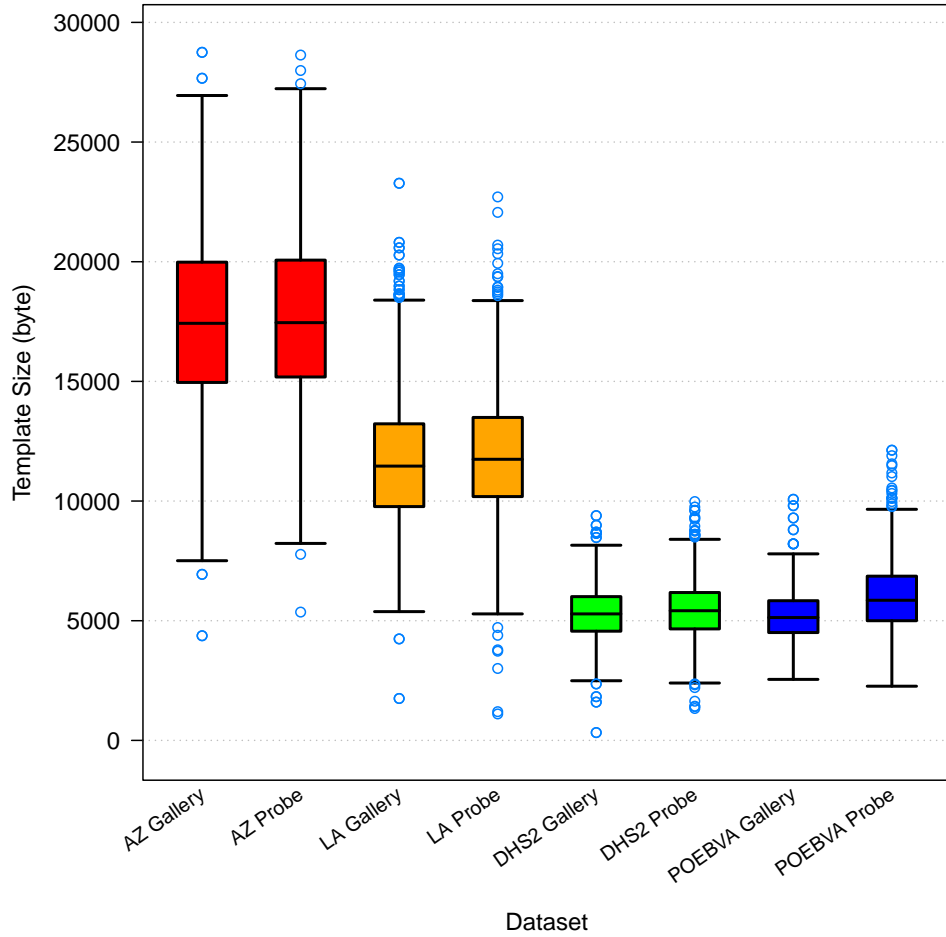


Figure 1: 1K Sample Evaluation – Template Size Distribution

	AZ		LA		DHS2		POEBVA	
	Gallery	Probe	Gallery	Probe	Gallery	Probe	Gallery	Probe
<i>Dimensions</i>	800x800	800x800	412x1000	400x776	368x368	368x368	500x500	368x368
<i>Maximum</i>	28750	28636	23278	22708	9389	9978	10073	12125
75%	19981.5	20067	13227	13493	6007	6178	5836	6862
<i>Median</i>	17426	17454.5	11460	11745	5285	5418	5133	5855
25%	14956	15184	9769	10187	4563	4658	4506	5000
<i>Minimum</i>	4373	5361	1751	1105	326	1333	2549	2264

Table 1: Sample Dataset — Template Size Distribution

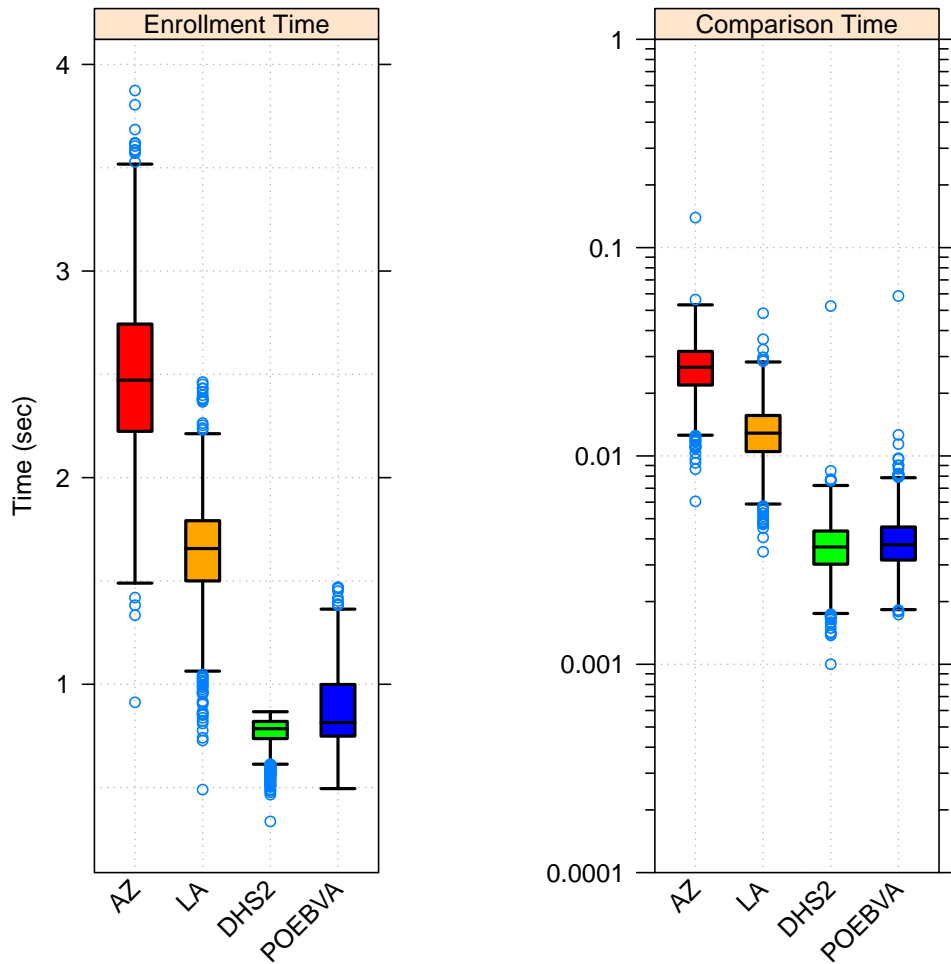


Figure 2: 1K Sample Evaluation – Enrollment and Comparison Timing

	AZ	LA	DHS2	POEBVA
<i>Maximum</i>	3.874	2.463	0.867	1.470
<i>75%</i>	2.743	1.792	0.820	0.999
<i>Median</i>	2.472	1.657	0.785	0.814
<i>25%</i>	2.224	1.500	0.737	0.749
<i>Minimum</i>	0.913	0.490	0.336	0.495

Table 2: Enrollment Times (sec)

	AZ	LA	DHS2	POEBVA
<i>Maximum</i>	0.139	0.048	0.052	0.059
<i>75%</i>	0.032	0.016	0.004	0.005
<i>Median</i>	0.027	0.013	0.004	0.004
<i>25%</i>	0.022	0.010	0.003	0.003
<i>Minimum</i>	0.006	0.003	0.001	0.002

Table 3: Comparison Times (sec)

2 Full Evaluation

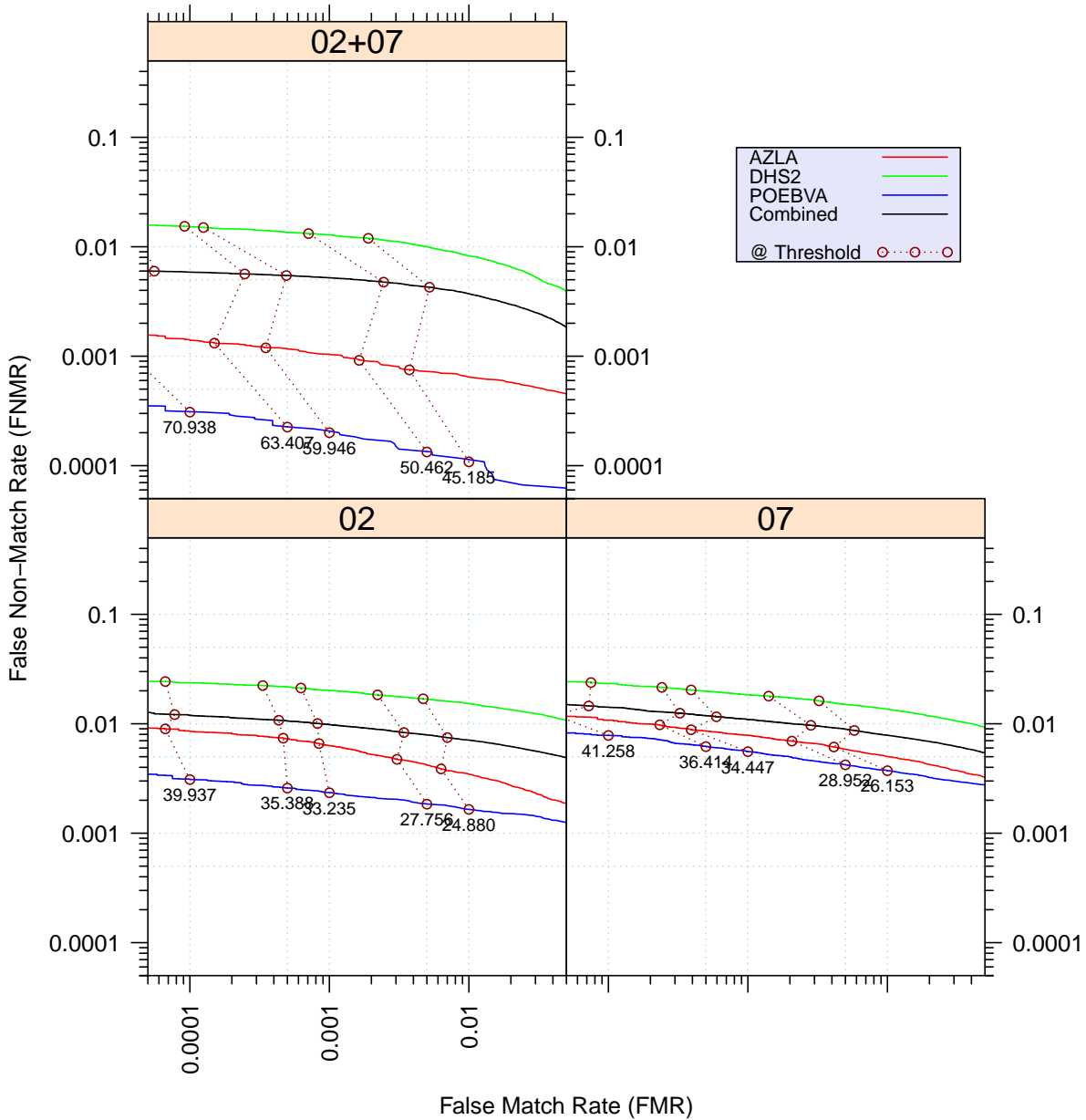


Figure 3: Full Evaluation – DET for POEBVA, DHS2, AZLA, and combined from R Index, L Index, and R/L Index

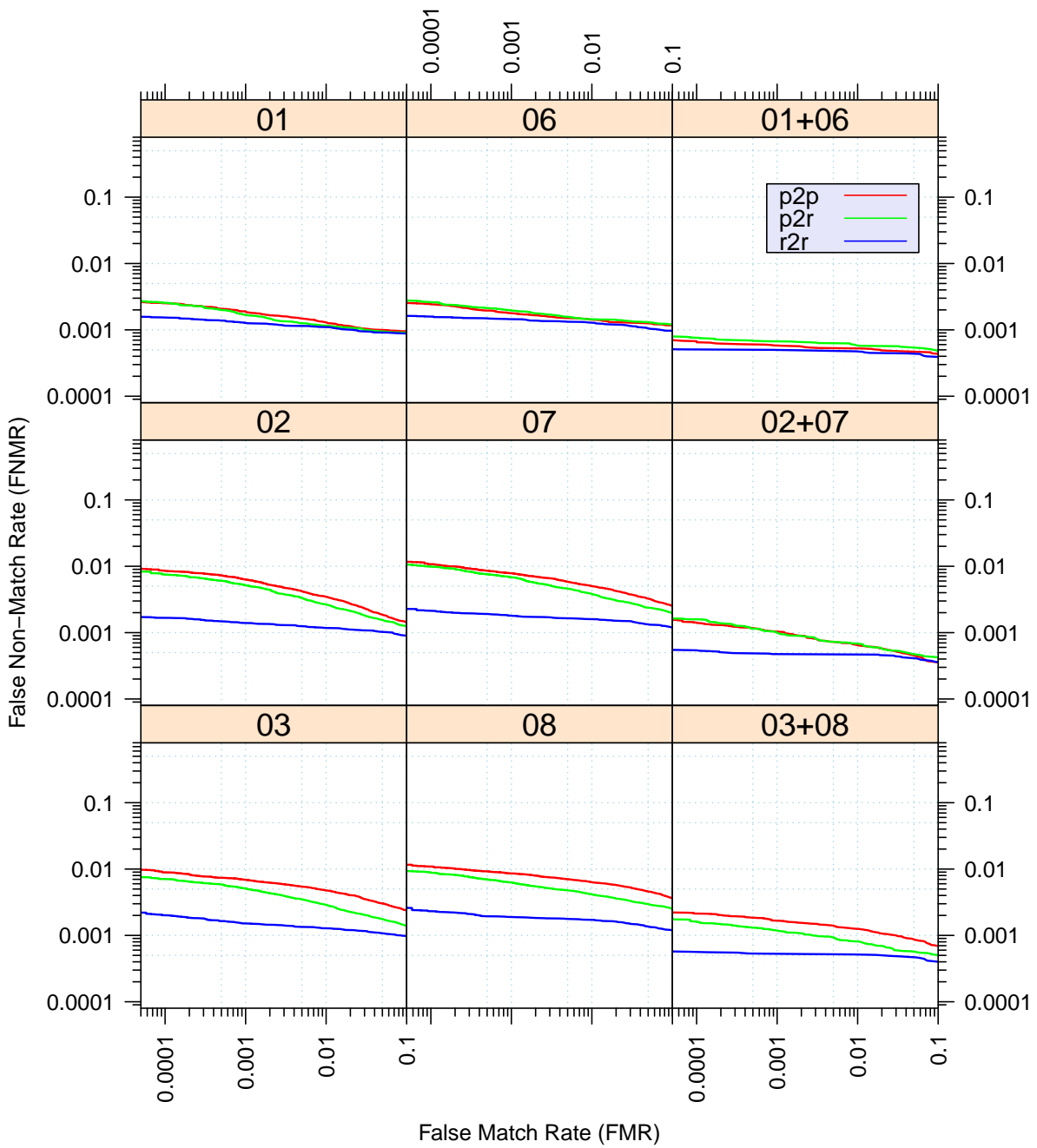


Figure 4: Full Evaluation – DET for all finger positions from AZLA

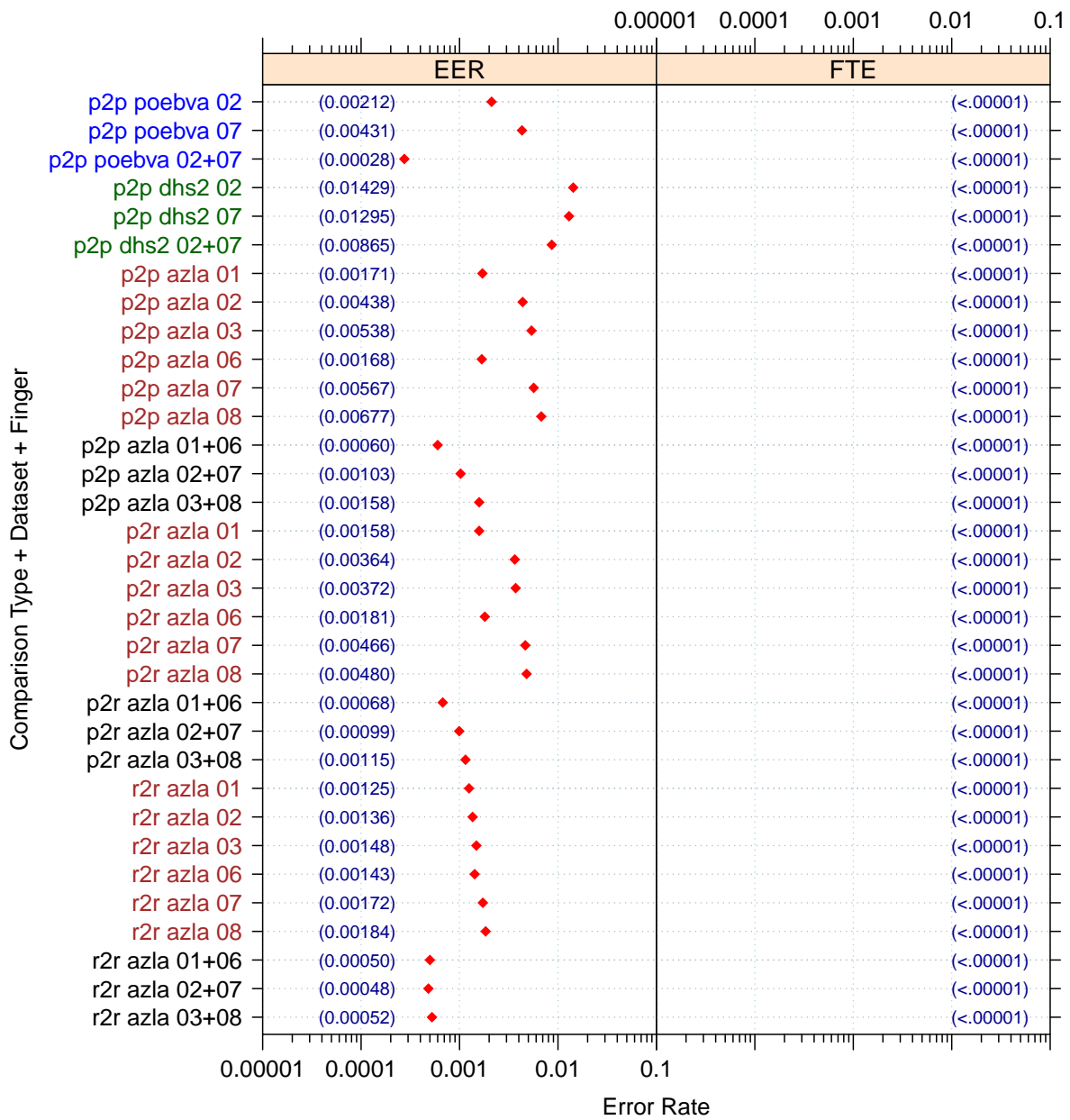


Figure 5: Full Evaluation – EERs and FTEs

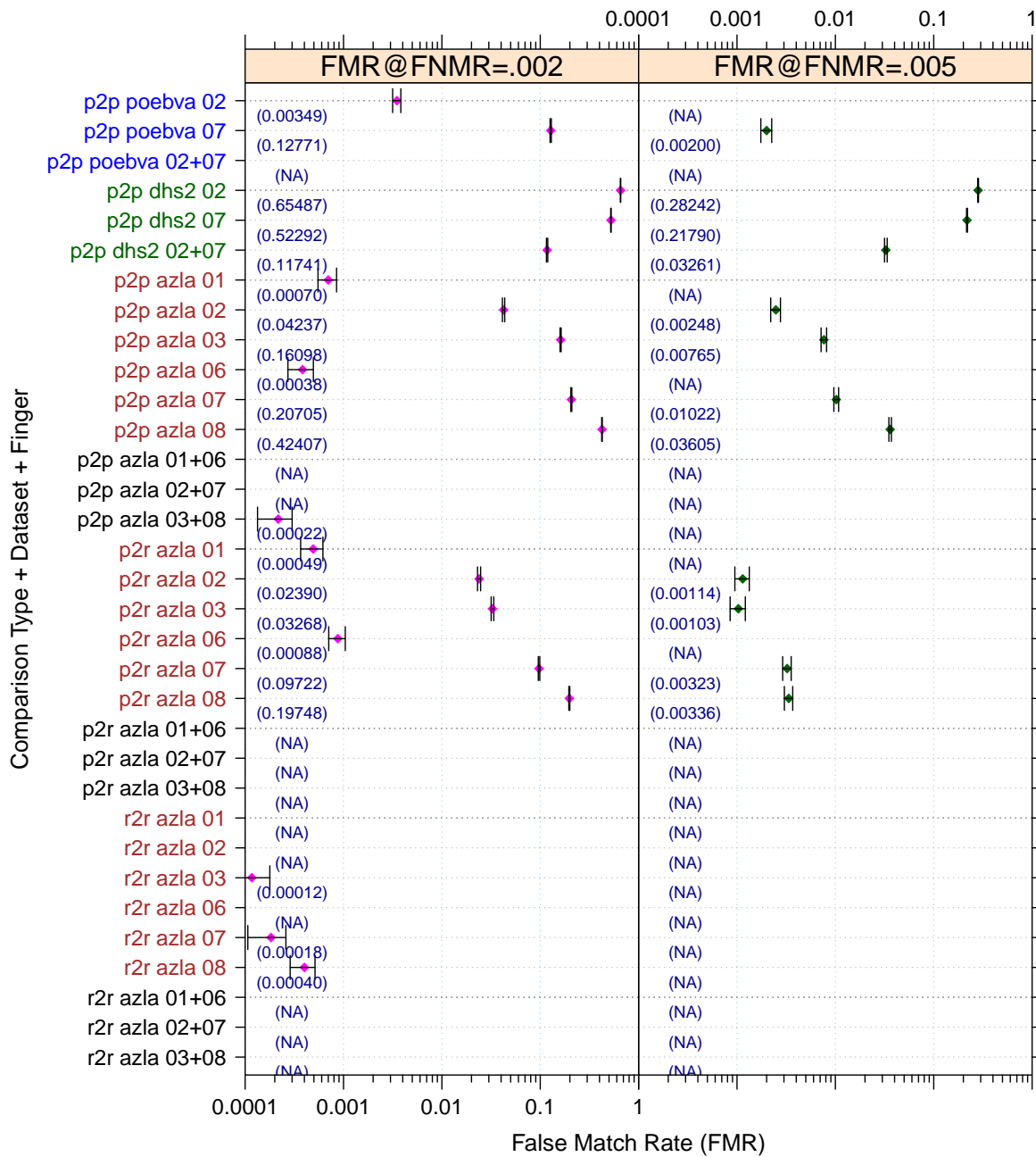


Figure 6: Full Evaluation – FMR@FNMR = (0.002, 0.005) and 95% Confidence Intervals

Note: “n/a” indicates that the value could not be reliably measured with the available sample size.

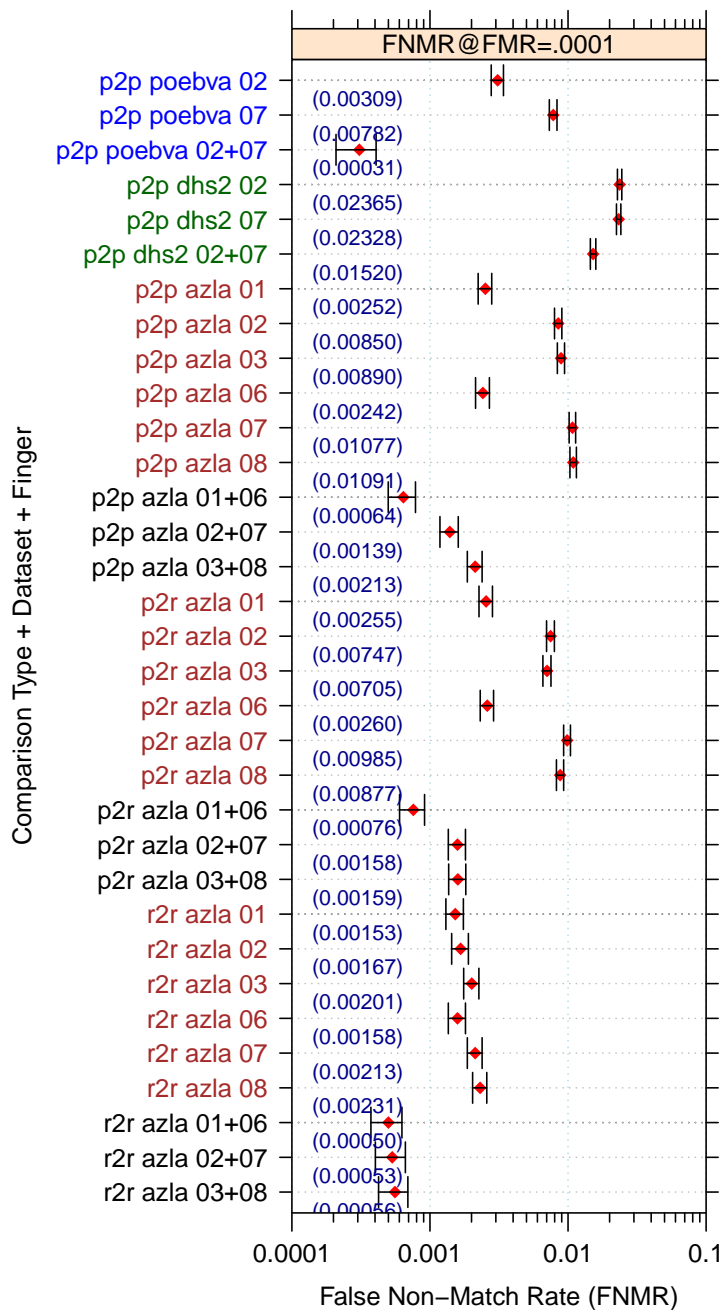


Figure 7: Full Evaluation – FNMR@FMR = 0.0001 and 95% Confidence Intervals

Note: “n/a” indicates that the value could not be reliably measured with the available sample size.

		EER	FTE Rate
Plain to Plain	<i>R Thumb</i>	0.0017	0.0000
	<i>R Index</i>	0.0044	0.0000
	<i>R Middle</i>	0.0054	0.0000
	<i>L Thumb</i>	0.0017	0.0000
	<i>L Index</i>	0.0057	0.0000
	<i>L Middle</i>	0.0068	0.0000
	<i>R/L Thumb</i>	0.0006	0.0000
	<i>R/L Index</i>	0.0010	0.0000
	<i>R/L Middle</i>	0.0016	0.0000
Plain to Rolled	<i>R Thumb</i>	0.0016	0.0000
	<i>R Index</i>	0.0036	0.0000
	<i>R Middle</i>	0.0037	0.0000
	<i>L Thumb</i>	0.0018	0.0000
	<i>L Index</i>	0.0047	0.0000
	<i>L Middle</i>	0.0048	0.0000
	<i>R/L Thumb</i>	0.0007	0.0000
	<i>R/L Index</i>	0.0010	0.0000
	<i>R/L Middle</i>	0.0011	0.0000
Rolled to Rolled	<i>R Thumb</i>	0.0013	0.0000
	<i>R Index</i>	0.0014	0.0000
	<i>R Middle</i>	0.0015	0.0000
	<i>L Thumb</i>	0.0014	0.0000
	<i>L Index</i>	0.0017	0.0000
	<i>L Middle</i>	0.0018	0.0000
	<i>R/L Thumb</i>	0.0005	0.0000
	<i>R/L Index</i>	0.0005	0.0000
	<i>R/L Middle</i>	0.0005	0.0000

Table 4: EER and FTE — Dataset AZLA

		EER	FTE Rate
<i>R Index</i>	0.0143	0.0000	
<i>L Index</i>	0.0129	0.0000	
<i>R/L Index</i>	0.0086	0.0000	

Table 5: EER and FTE — Dataset DHS2

		EER	FTE Rate
<i>R Index</i>	0.0021	0.0000	
<i>L Index</i>	0.0043	0.0000	
<i>R/L Index</i>	0.0003	0.0000	

Table 6: EER and FTE — Dataset POEBVA

		FNMR@FMR = 0.0001	FMR@FNMR = 0.002	FMR@FNMR = 0.005
Plain to Plain	<i>R Thumb</i>	0.0025 ±0.00028	0.0007 ±0.00015	n/a
	<i>R Index</i>	0.0085 ±0.00052	0.0424 ±0.00114	0.0025 ±0.00028
	<i>R Middle</i>	0.0089 ±0.00053	0.1610 ±0.00208	0.0076 ±0.00049
	<i>L Thumb</i>	0.0024 ±0.00028	0.0004 ±0.00011	n/a
	<i>L Index</i>	0.0108 ±0.00058	0.2071 ±0.00229	0.0102 ±0.00057
	<i>L Middle</i>	0.0109 ±0.00059	0.4241 ±0.00280	0.0360 ±0.00105
	<i>R/L Thumb</i>	0.0006 ±0.00014	n/a	n/a
	<i>R/L Index</i>	0.0014 ±0.00021	n/a	n/a
	<i>R/L Middle</i>	0.0021 ±0.00026	0.0002 ±0.00008	n/a
Plain to Rolled	<i>R Thumb</i>	0.0026 ±0.00028	0.0005 ±0.00013	n/a
	<i>R Index</i>	0.0075 ±0.00049	0.0239 ±0.00086	0.0011 ±0.00019
	<i>R Middle</i>	0.0070 ±0.00047	0.0327 ±0.00101	0.0010 ±0.00018
	<i>L Thumb</i>	0.0026 ±0.00029	0.0009 ±0.00017	n/a
	<i>L Index</i>	0.0098 ±0.00056	0.0972 ±0.00168	0.0032 ±0.00032
	<i>L Middle</i>	0.0088 ±0.00053	0.1975 ±0.00225	0.0034 ±0.00033
	<i>R/L Thumb</i>	0.0008 ±0.00016	n/a	n/a
	<i>R/L Index</i>	0.0016 ±0.00022	n/a	n/a
	<i>R/L Middle</i>	0.0016 ±0.00023	n/a	n/a
Rolled to Rolled	<i>R Thumb</i>	0.0015 ±0.00022	n/a	n/a
	<i>R Index</i>	0.0017 ±0.00023	n/a	n/a
	<i>R Middle</i>	0.0020 ±0.00025	0.0001 ±0.00006	n/a
	<i>L Thumb</i>	0.0016 ±0.00022	n/a	n/a
	<i>L Index</i>	0.0021 ±0.00026	0.0002 ±0.00008	n/a
	<i>L Middle</i>	0.0023 ±0.00027	0.0004 ±0.00011	n/a
	<i>R/L Thumb</i>	0.0005 ±0.00013	n/a	n/a
	<i>R/L Index</i>	0.0005 ±0.00013	n/a	n/a
	<i>R/L Middle</i>	0.0006 ±0.00013	n/a	n/a

Table 7: Details for FNMR@FMR = 0.0001 and FMR@FNMR = (0.002, 0.005) — Dataset AZLA

Note: “n/a” indicates that the value could not be reliably measured with the available sample size.

	FNMR@FMR = 0.0001	FMR@FNMR = 0.002	FMR@FNMR = 0.005
<i>R Index</i>	0.0237 ±0.00086	0.6549 ±0.00269	0.2824 ±0.00255
<i>L Index</i>	0.0233 ±0.00085	0.5229 ±0.00283	0.2179 ±0.00234
<i>R/L Index</i>	0.0152 ±0.00069	0.1174 ±0.00182	0.0326 ±0.00101

Table 8: Details for FNMR@FMR = 0.0001 and FMR@FNMR = (0.002, 0.005) — Dataset DHS2

	FNMR@FMR = 0.0001	FMR@FNMR = 0.002	FMR@FNMR = 0.005
<i>R Index</i>	0.0031 ±0.00031	0.0035 ±0.00033	n/a
<i>L Index</i>	0.0078 ±0.00050	0.1277 ±0.00189	0.0020 ±0.00025
<i>R/L Index</i>	0.0003 ±0.00010	n/a	n/a

Table 9: Details for FNMR@FMR = 0.0001 and FMR@FNMR = (0.002, 0.005) — Dataset POEBVA

Note: “n/a” indicates that the value could not be reliably measured with the available sample size.

3 Original PFT Dataset

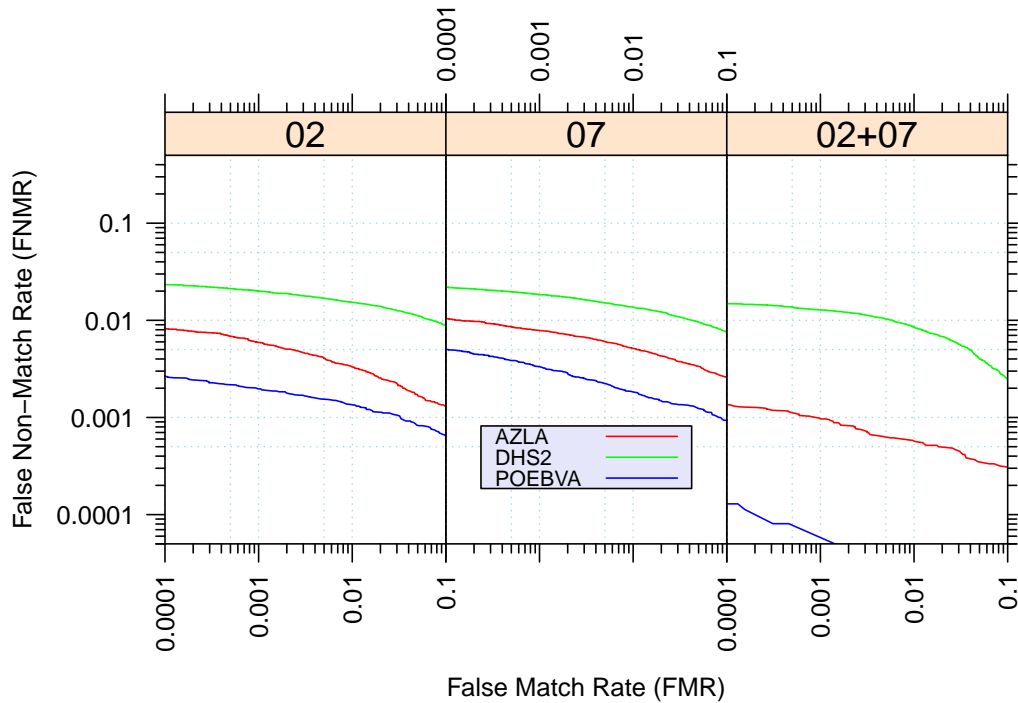


Figure 8: Original PFT Dataset – DET

		EER	FNMR@FMR = 0.0001	FMR@FNMR = 0.005
AZLA	<i>R Index</i>	0.0043	0.0082	0.0022
	<i>L Index</i>	0.0059	0.0104	0.0110
	<i>R/L Index</i>	0.0010	0.0014	n/a
DHS2	<i>R Index</i>	n/a	0.0233	0.2977
	<i>L Index</i>	0.0131	0.0220	0.2390
	<i>R/L Index</i>	0.0089	0.0148	0.0390
POEBVA	<i>R Index</i>	n/a	0.0026	n/a
	<i>L Index</i>	0.0026	0.0050	0.0001
	<i>R/L Index</i>	n/a	0.0001	n/a

Table 10: Details for EER, FNMR@FMR = 0.0001, and FMR@FNMR = 0.005 — Original PFT Dataset

Note: “n/a” indicates that the value could not be reliably measured with the available sample size.