

Participant Results

Proprietary Fingerprint Template Evaluation II (PFT-II)

Participant 4E — Neurotechnology

Image Group

Information Access Division

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1 1K Sample Evaluation

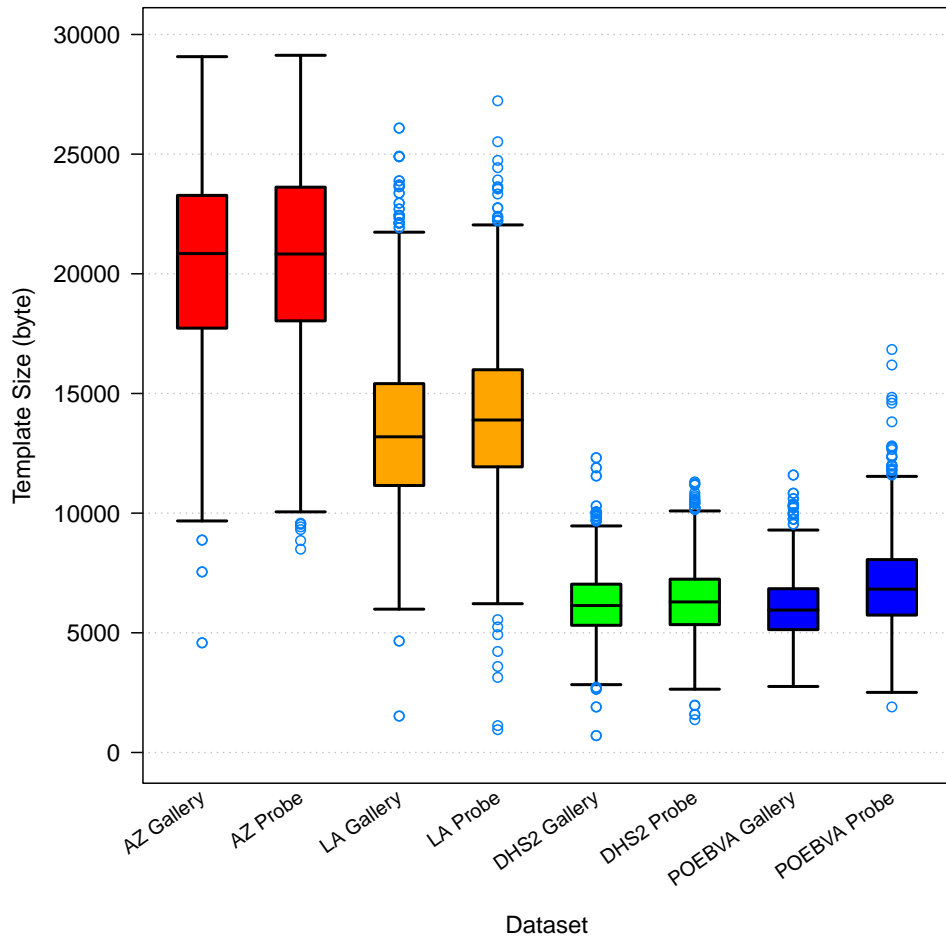


Figure 1: 1K Sample Evaluation – Template Size Distribution

	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>	29073	29130	26090	27230	12315	11308	11593	16837
75%	23278	23620	15412	15991.5	7033	7242	6843	8059
<i>Median</i>	20846	20827	13189	13892	6140	6292	5950	6824
25%	17730	18034	11156	11935	5313.5	5342	5133	5741
<i>Minimum</i>	4582	8496	1523	953	706	1371	2758	1903

Table 1: Sample Dataset — Template Size Distribution

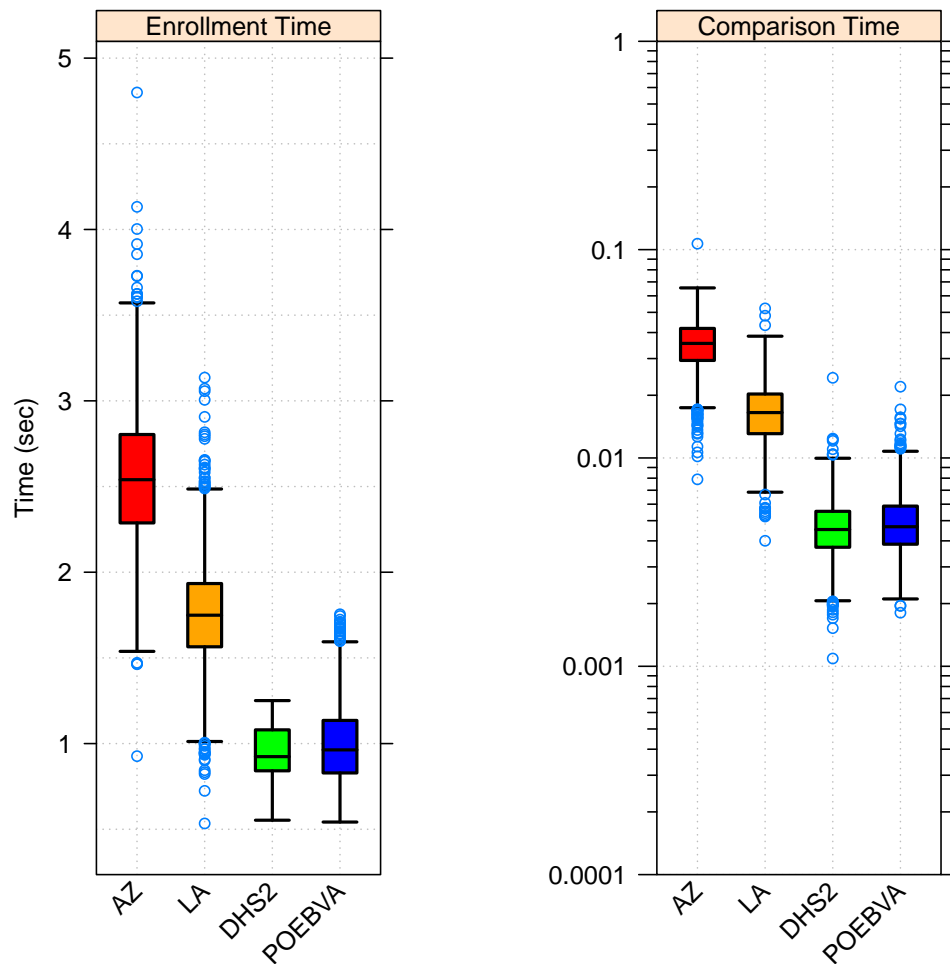


Figure 2: 1K Sample Evaluation – Enrollment and Comparison Timing

	AZ	LA	DHS2	POEBVA
<i>Maximum</i>	4.799	3.136	1.251	1.755
<i>75%</i>	2.804	1.934	1.080	1.135
<i>Median</i>	2.540	1.749	0.924	0.963
<i>25%</i>	2.288	1.565	0.841	0.829
<i>Minimum</i>	0.927	0.534	0.553	0.542

Table 2: Enrollment Times (sec)

	AZ	LA	DHS2	POEBVA
<i>Maximum</i>	0.107	0.052	0.024	0.022
<i>75%</i>	0.042	0.020	0.006	0.006
<i>Median</i>	0.035	0.017	0.005	0.005
<i>25%</i>	0.029	0.013	0.004	0.004
<i>Minimum</i>	0.008	0.004	0.001	0.002

Table 3: Comparison Times (sec)

2 Full Evaluation

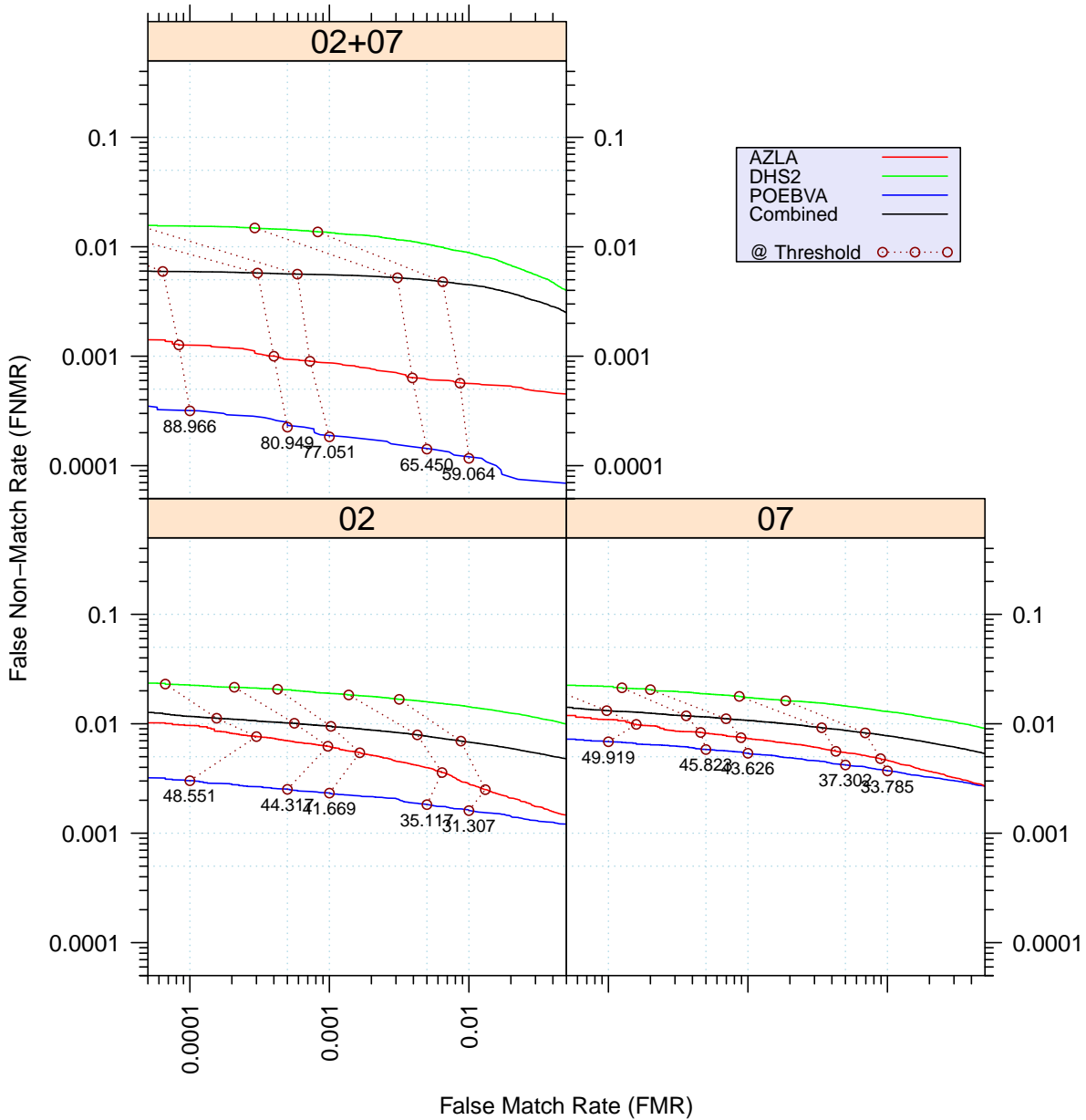


Figure 3: Full Evaluation – DET for POEBVA, DHS2, AZLA, and combined from R Index, L Index, and R/L Index

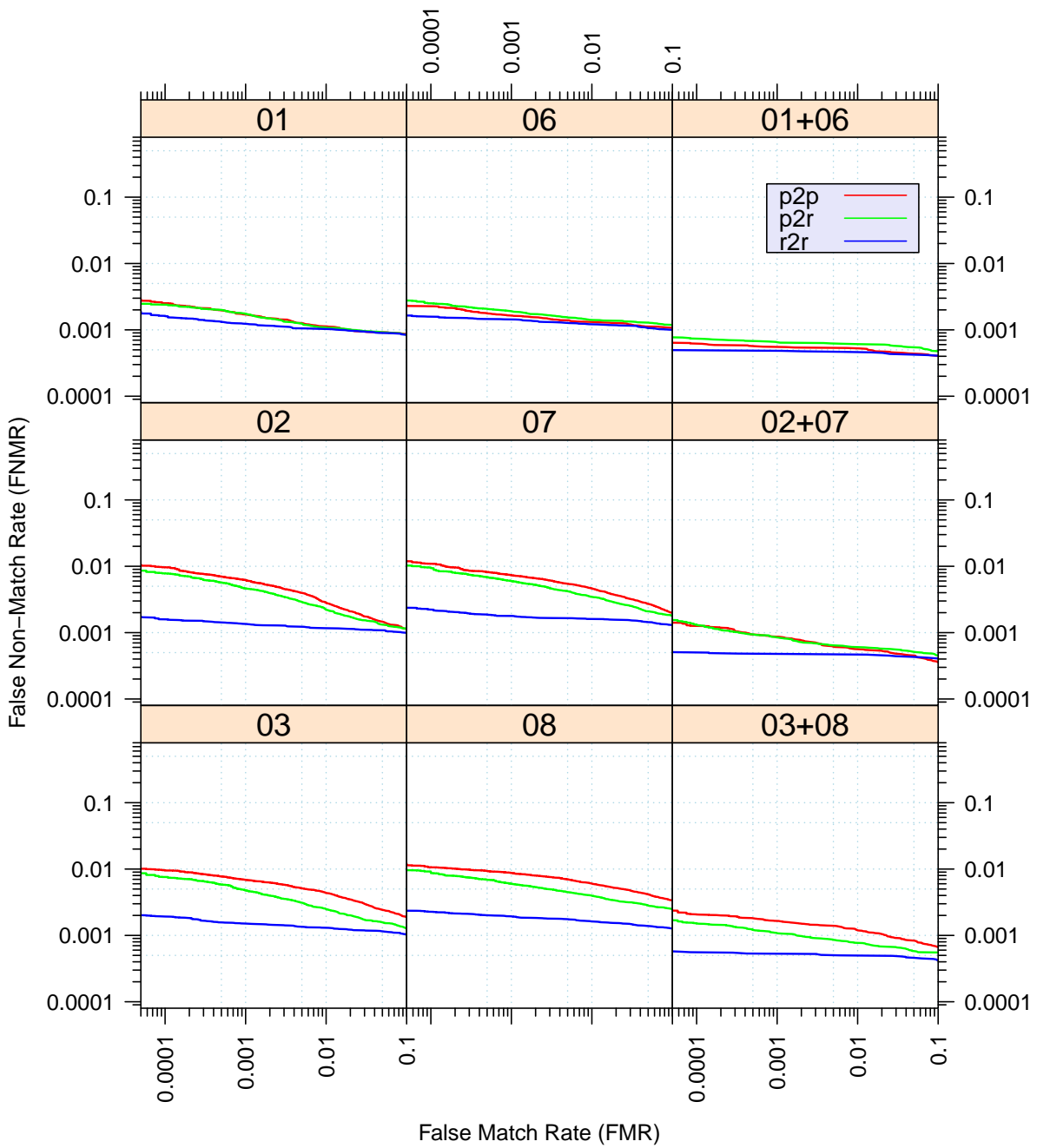


Figure 4: Full Evaluation – DET for all finger positions from AZLA

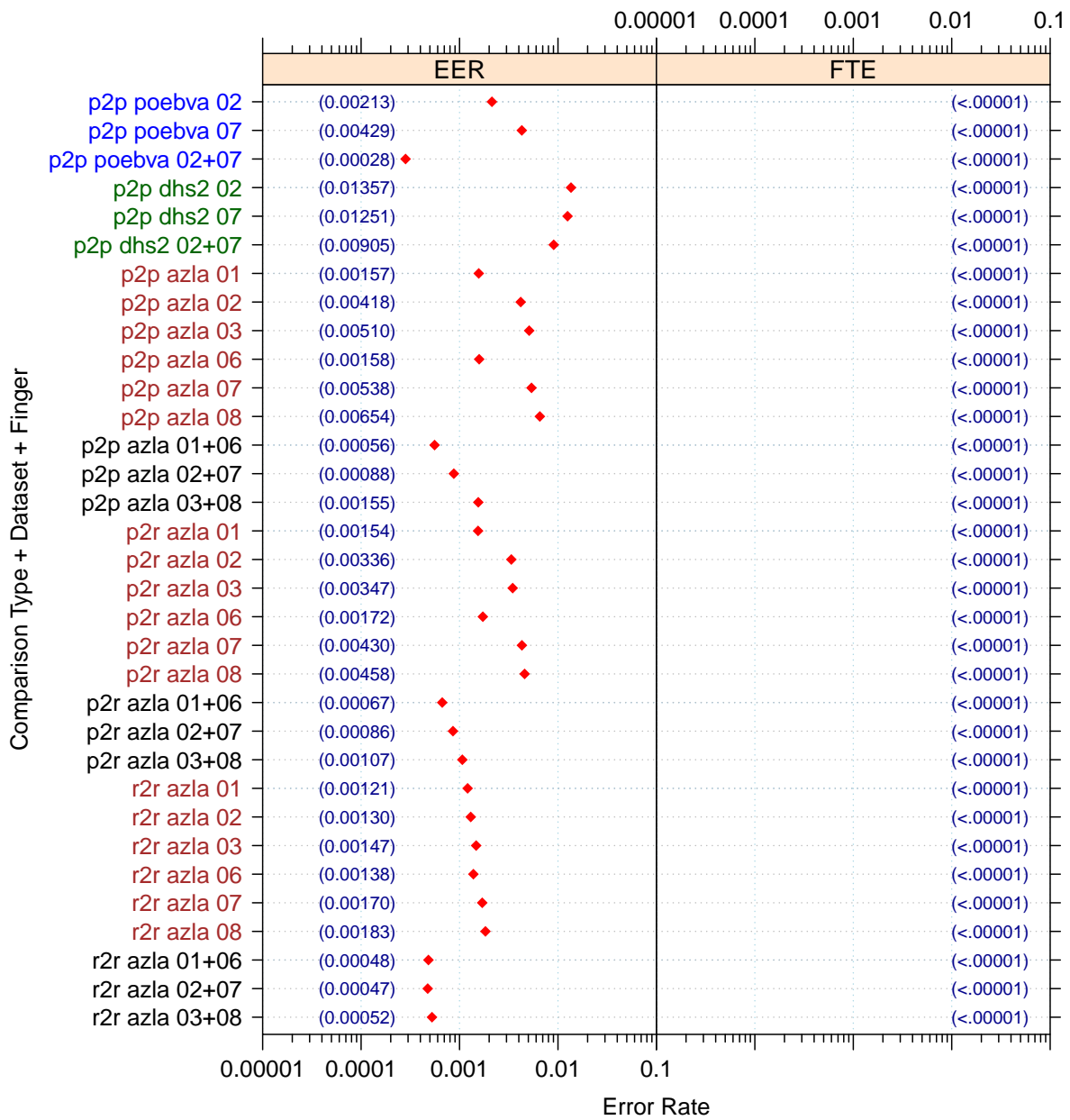


Figure 5: Full Evaluation – EERs and FTEs

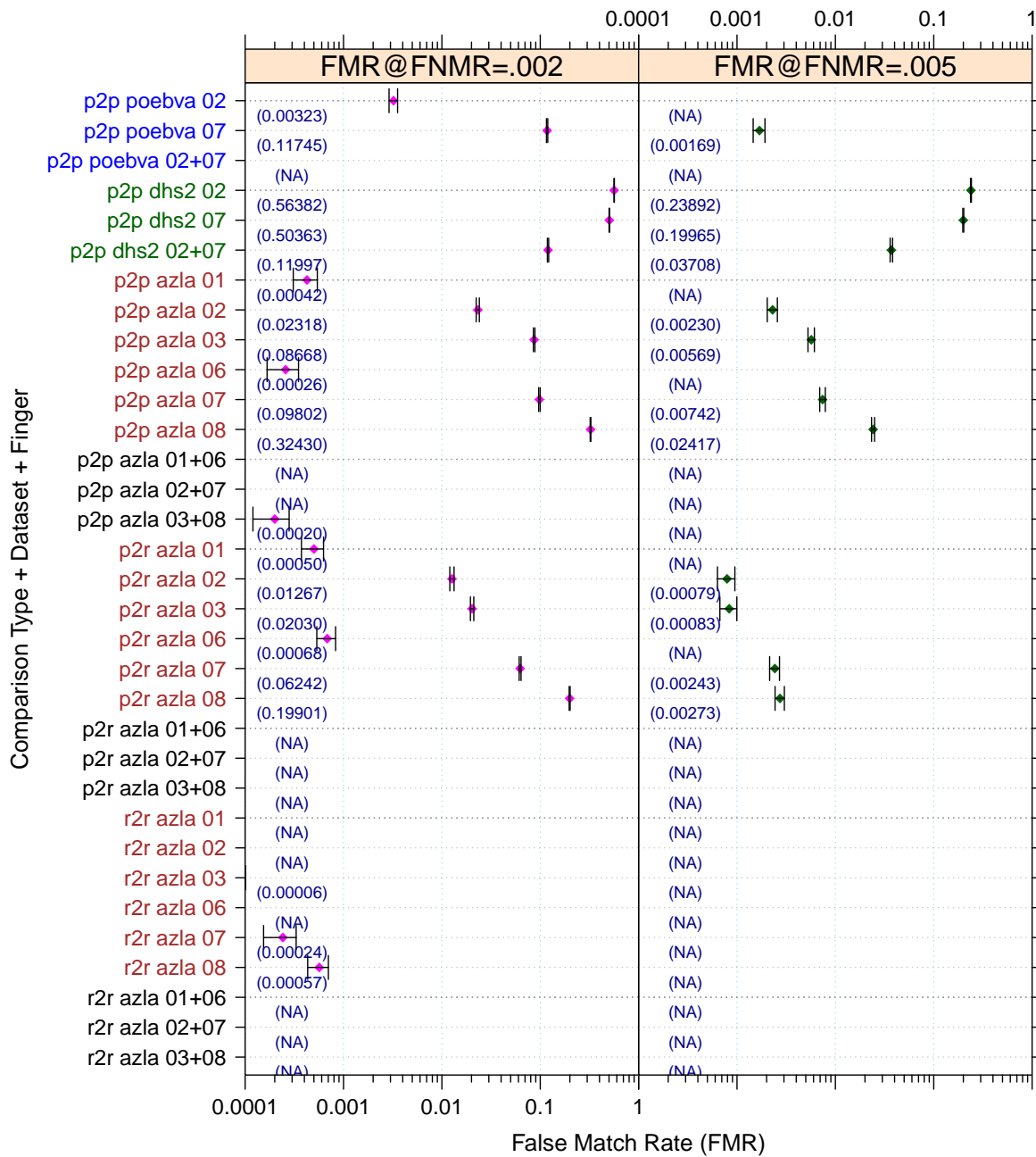


Figure 6: Full Evaluation – FMR@FNMR = (0.002, 0.005) and 95% Confidence Intervals

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

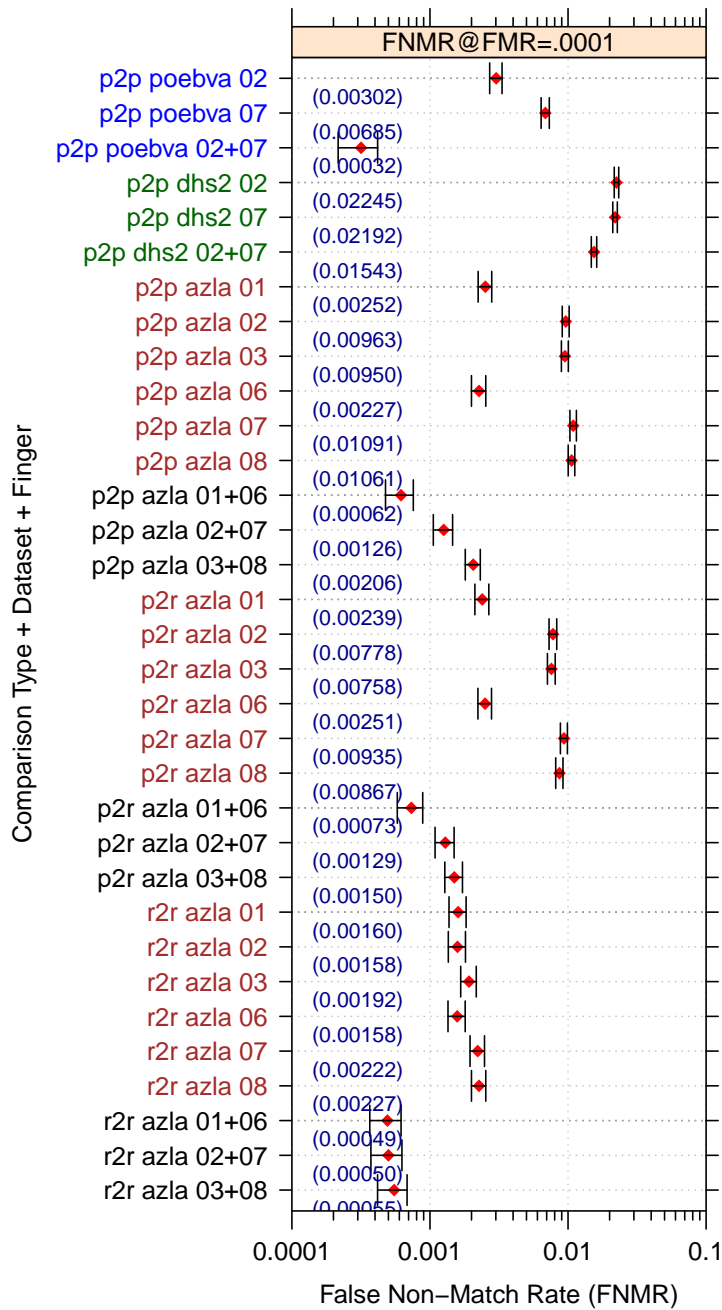


Figure 7: Full Evaluation – FNMR@FMR = 0.0001 and 95% Confidence Intervals

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>	0.0016	0.0000
	<i>R Index</i>	0.0042	0.0000
	<i>R Middle</i>	0.0051	0.0000
	<i>L Thumb</i>	0.0016	0.0000
	<i>L Index</i>	0.0054	0.0000
	<i>L Middle</i>	0.0065	0.0000
	<i>R/L Thumb</i>	0.0006	0.0000
	<i>R/L Index</i>	0.0009	0.0000
	<i>R/L Middle</i>	0.0015	0.0000
Plain to Rolled	<i>R Thumb</i>	0.0015	0.0000
	<i>R Index</i>	0.0034	0.0000
	<i>R Middle</i>	0.0035	0.0000
	<i>L Thumb</i>	0.0017	0.0000
	<i>L Index</i>	0.0043	0.0000
	<i>L Middle</i>	0.0046	0.0000
	<i>R/L Thumb</i>	0.0007	0.0000
	<i>R/L Index</i>	0.0009	0.0000
	<i>R/L Middle</i>	0.0011	0.0000
Rolled to Rolled	<i>R Thumb</i>	0.0012	0.0000
	<i>R Index</i>	0.0013	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>	0.0136	0.0000
<i>L Index</i>	0.0125	0.0000
<i>R/L Index</i>	0.0091	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	0.0004 ±0.00012	n/a
	<i>R Index</i>	0.0096 ±0.00055	0.0232 ±0.00085	0.0023 ±0.00027
	<i>R Middle</i>	0.0095 ±0.00055	0.0867 ±0.00159	0.0057 ±0.00043
	<i>L Thumb</i>	0.0023 ±0.00027	0.0003 ±0.00009	n/a
	<i>L Index</i>	0.0109 ±0.00059	0.0980 ±0.00168	0.0074 ±0.00049
	<i>L Middle</i>	0.0106 ±0.00058	0.3243 ±0.00265	0.0242 ±0.00087
	<i>R/L Thumb</i>	0.0006 ±0.00014	n/a	n/a
	<i>R/L Index</i>	0.0013 ±0.00020	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>	0.0024 ±0.00028	0.0005 ±0.00013	n/a
	<i>R Index</i>	0.0078 ±0.00050	0.0127 ±0.00063	0.0008 ±0.00016
	<i>R Middle</i>	0.0076 ±0.00049	0.0203 ±0.00080	0.0008 ±0.00016
	<i>L Thumb</i>	0.0025 ±0.00028	0.0007 ±0.00015	n/a
	<i>L Index</i>	0.0094 ±0.00055	0.0624 ±0.00137	0.0024 ±0.00028
	<i>L Middle</i>	0.0087 ±0.00052	0.1990 ±0.00226	0.0027 ±0.00030
	<i>R/L Thumb</i>	0.0007 ±0.00015	n/a	n/a
	<i>R/L Index</i>	0.0013 ±0.00020	n/a	n/a
	<i>R/L Middle</i>	0.0015 ±0.00022	n/a	n/a
Rolled to Rolled	<i>R Thumb</i>	0.0016 ±0.00023	n/a	n/a
	<i>R Index</i>	0.0016 ±0.00022	n/a	n/a
	<i>R Middle</i>	0.0019 ±0.00025	n/a	n/a
	<i>L Thumb</i>	0.0016 ±0.00022	n/a	n/a
	<i>L Index</i>	0.0022 ±0.00027	0.0002 ±0.00009	n/a
	<i>L Middle</i>	0.0023 ±0.00027	0.0006 ±0.00014	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>	0.0225 ±0.00084	0.5638 ±0.00281	0.2389 ±0.00241
<i>L Index</i>	0.0219 ±0.00083	0.5036 ±0.00283	0.1996 ±0.00226
<i>R/L Index</i>	0.0154 ±0.00070	0.1200 ±0.00184	0.0371 ±0.00107

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>	0.0030 ±0.00031	0.0032 ±0.00032	n/a
<i>L Index</i>	0.0069 ±0.00047	0.1174 ±0.00182	0.0017 ±0.00023
<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

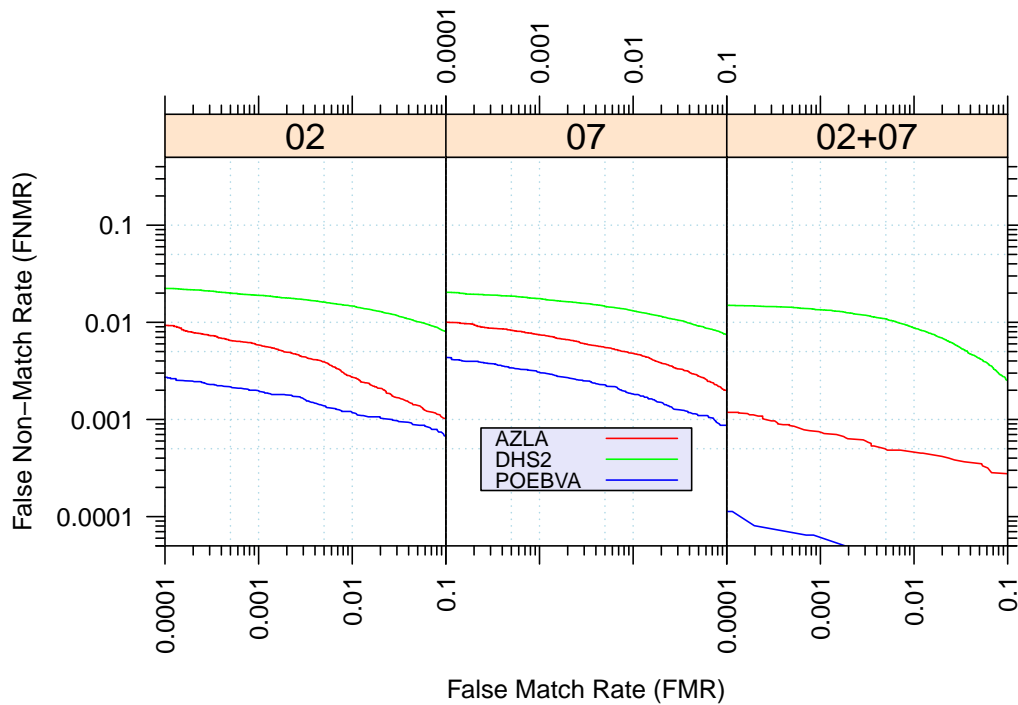


Figure 8: Original PFT Dataset – DET

		EER	FNMR@FMR = 0.0001	FMR@FNMR = 0.005
AZLA	<i>R Index</i>	0.0041	0.0093	0.0018
	<i>L Index</i>	0.0054	0.0100	0.0081
	<i>R/L Index</i>	0.0008	0.0012	n/a
DHS2	<i>R Index</i>	0.0138	0.0223	0.2389
	<i>L Index</i>	0.0126	0.0204	0.2214
	<i>R/L Index</i>	0.0091	0.0150	0.0372
POEBVA	<i>R Index</i>	n/a	0.0027	n/a
	<i>L Index</i>	0.0025	0.0043	n/a
	<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.