

Participant Results

Proprietary Fingerprint Template Evaluation II (PFT-II)

Participant 3U — Innovatrics

Image Group

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1 1K Sample Evaluation

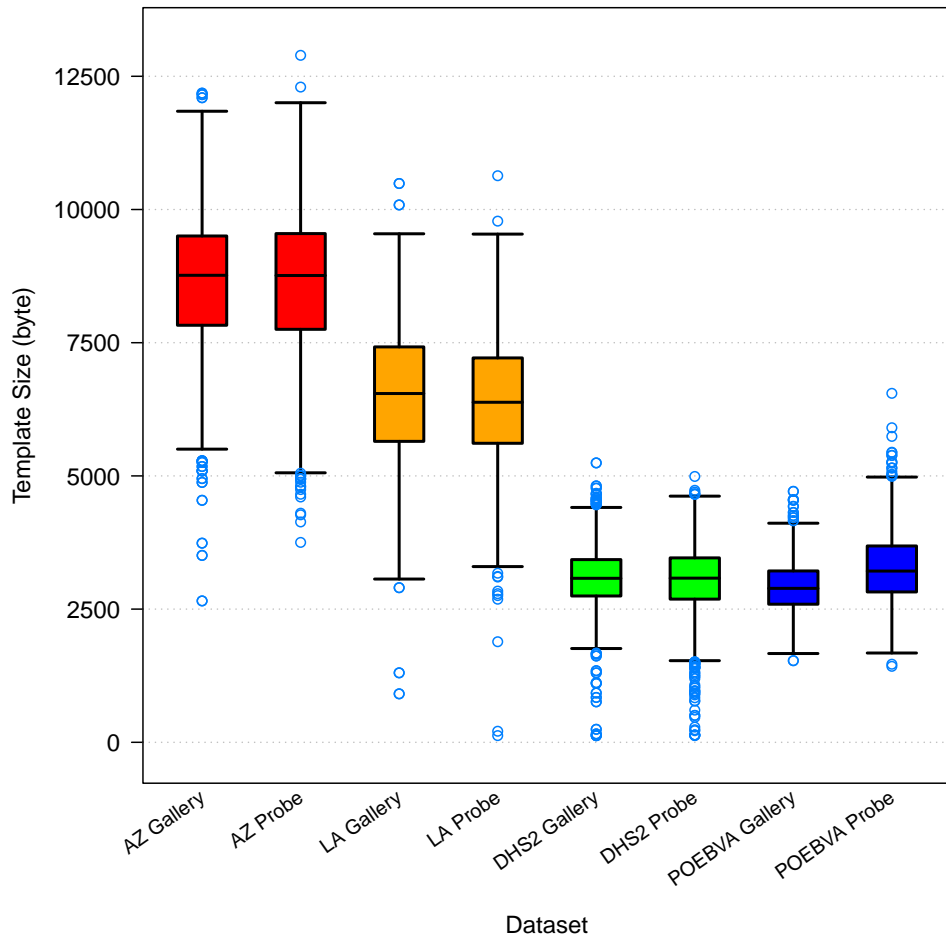


Figure 1: 1K Sample Evaluation – Template Size Distribution

	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>	12184	12894	10488	10634	5244	4990	4710	6550
75%	9503	9548	7421	7214	3429	3461	3216	3685
<i>Median</i>	8765	8761	6546	6382	3078	3081	2889	3214
25%	7827	7751	5648	5612	2746	2687	2592	2822
<i>Minimum</i>	2654	3752	910	126	126	126	1532	1426

Table 1: Sample Dataset — Template Size Distribution

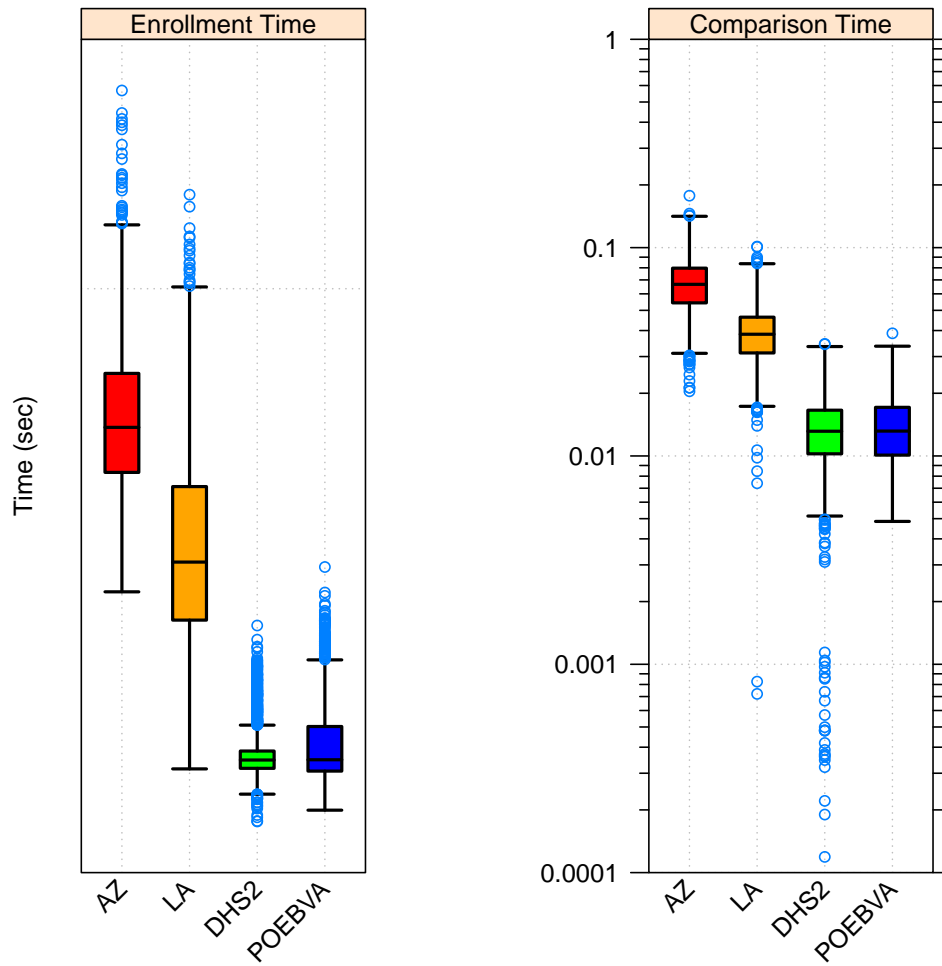


Figure 2: 1K Sample Evaluation – Enrollment and Comparison Timing

	AZ	LA	DHS2	POEBVA
<i>Maximum</i>	0.666	0.579	0.218	0.267
<i>75%</i>	0.429	0.334	0.113	0.133
<i>Median</i>	0.384	0.271	0.105	0.105
<i>25%</i>	0.346	0.222	0.098	0.096
<i>Minimum</i>	0.246	0.098	0.054	0.063

Table 2: Enrollment Times (sec)

	AZ	LA	DHS2	POEBVA
<i>Maximum</i>	0.178	0.101	0.034	0.039
<i>75%</i>	0.080	0.046	0.017	0.017
<i>Median</i>	0.067	0.038	0.013	0.013
<i>25%</i>	0.054	0.031	0.010	0.010
<i>Minimum</i>	0.020	0.001	0.000	0.005

Table 3: Comparison Times (sec)

2 Full Evaluation

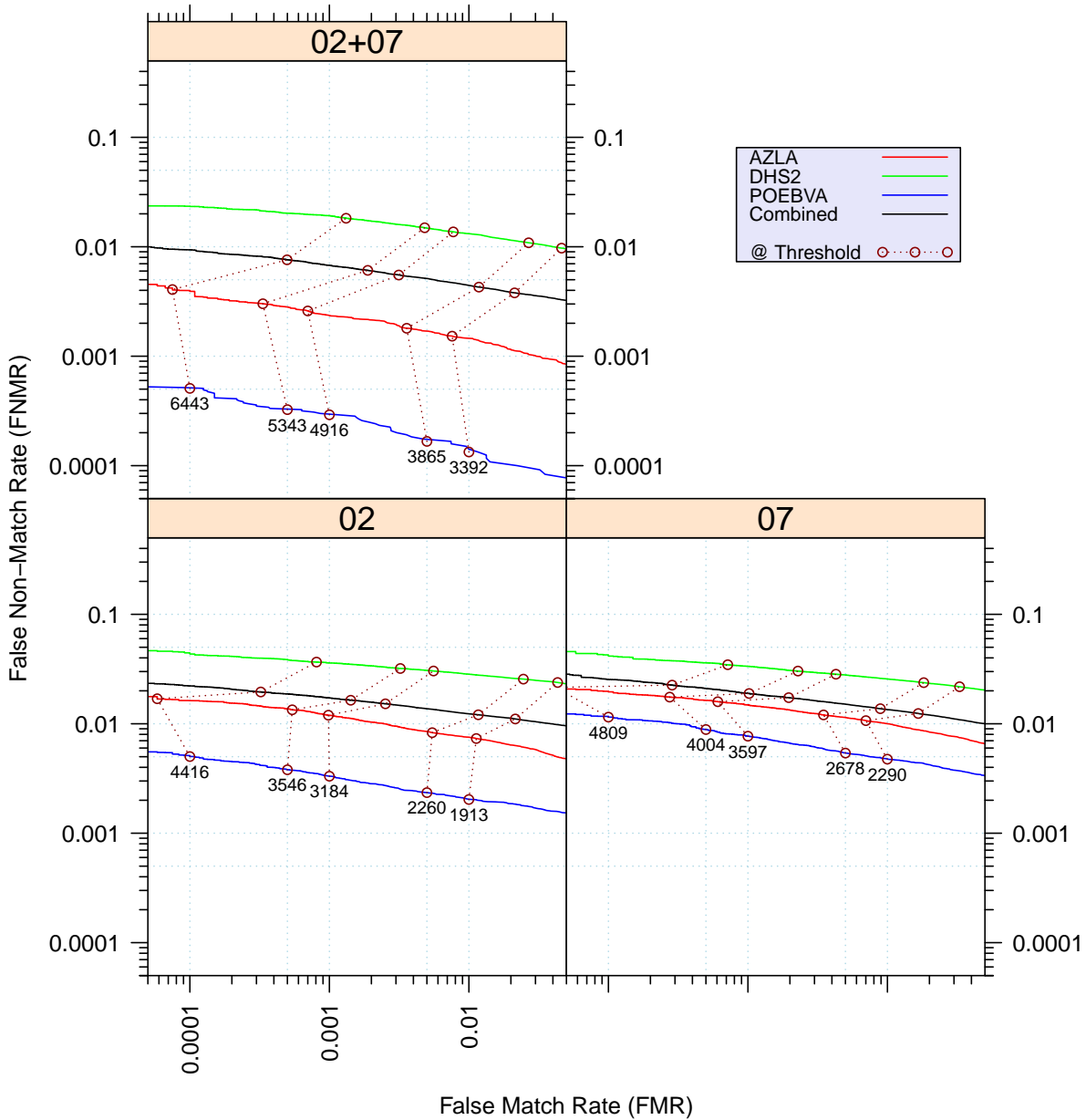


Figure 3: Full Evaluation – DET for POEBVA, DHS2, AZLA, and combined from R Index, L Index, and R/L Index

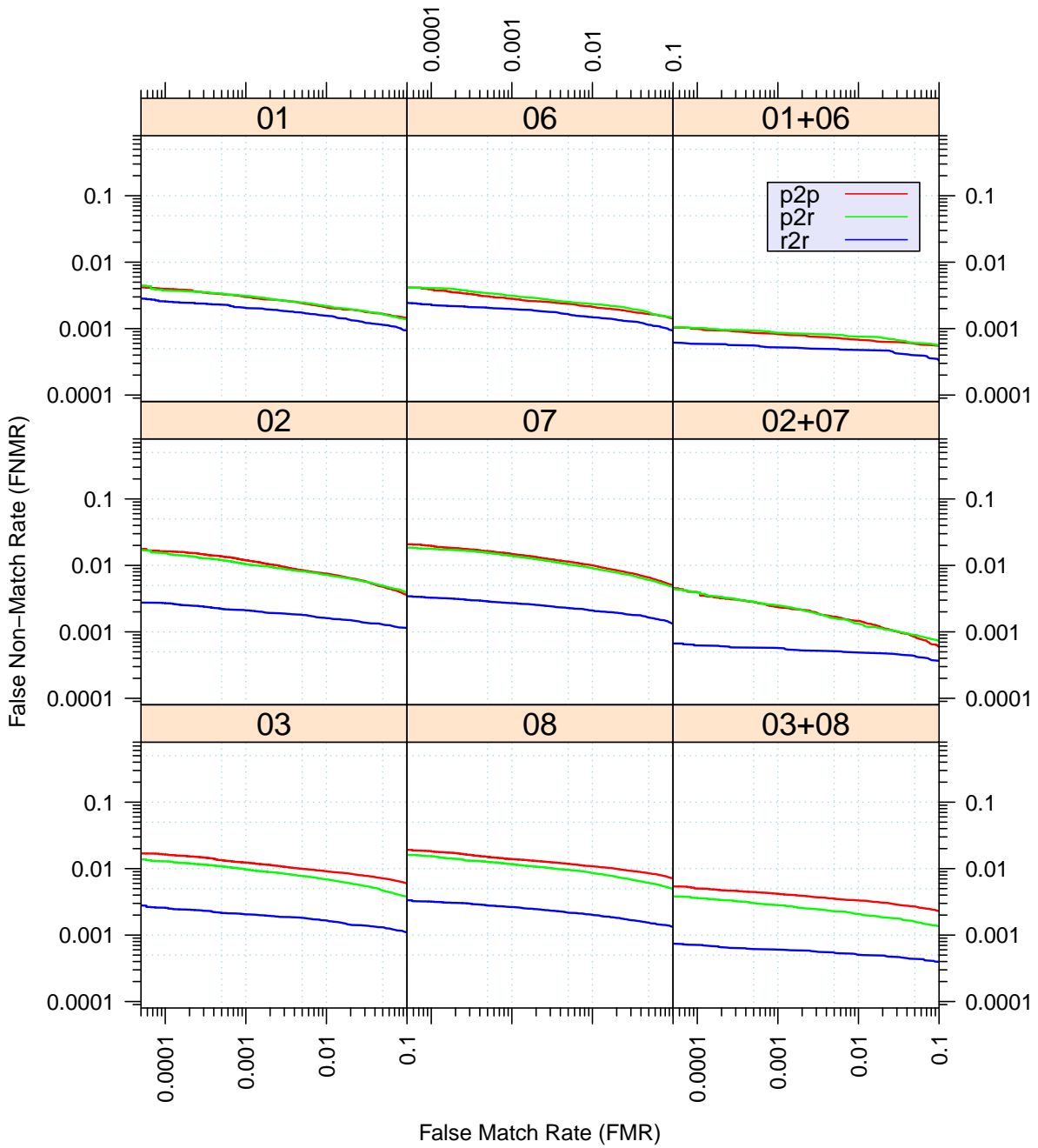


Figure 4: Full Evaluation – DET for all finger positions from AZLA

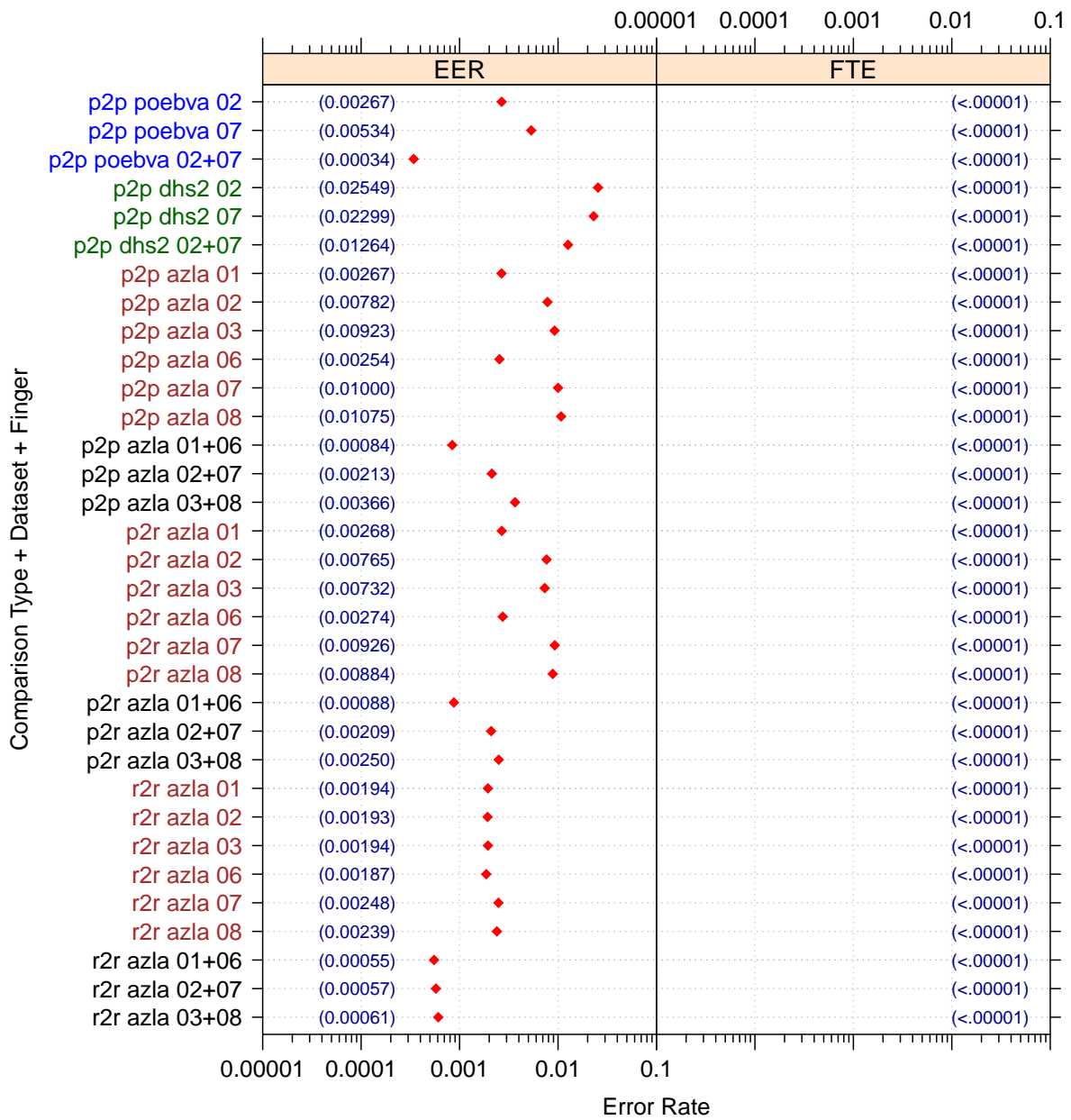


Figure 5: Full Evaluation – EERs and FTEs

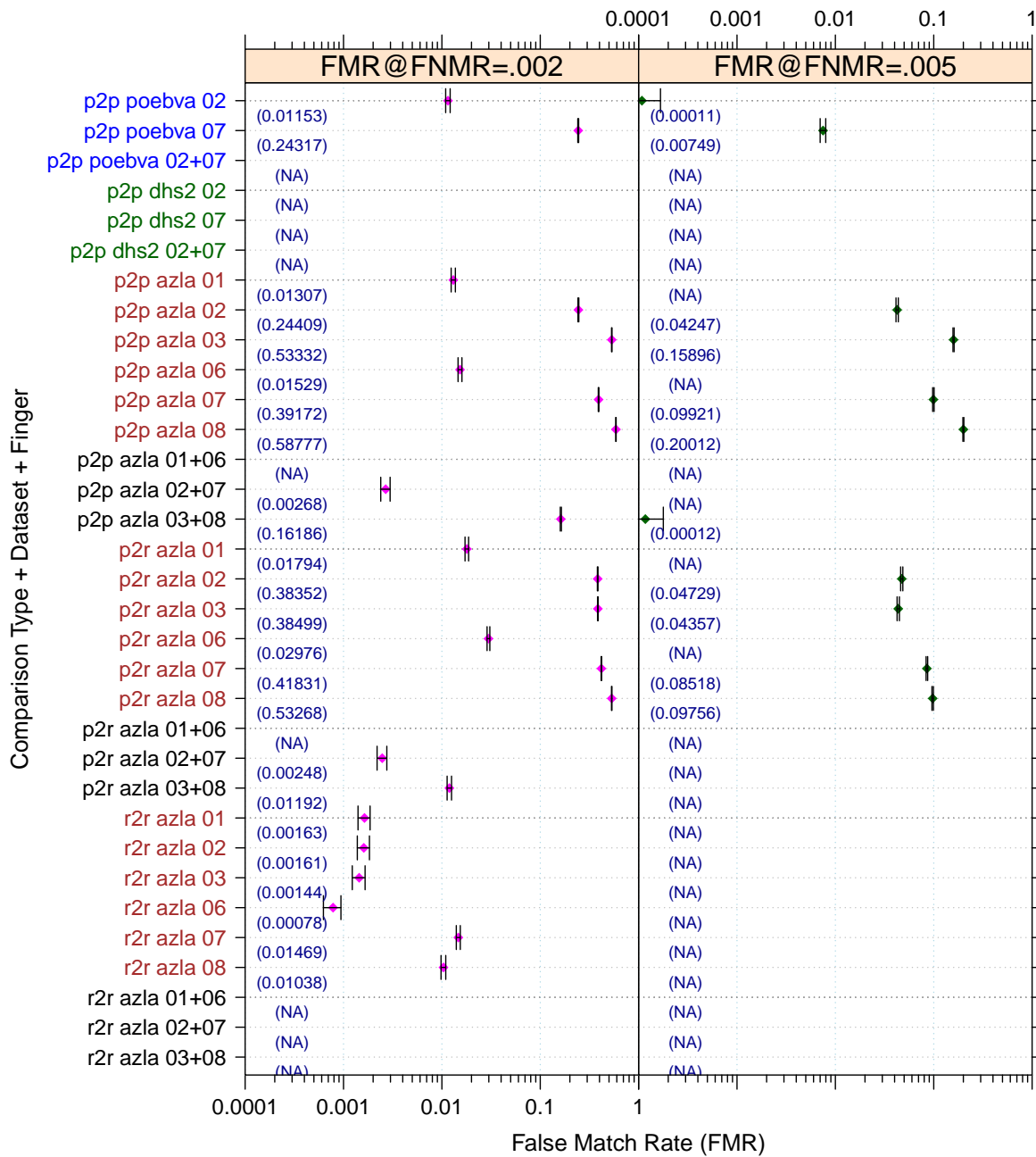


Figure 6: Full Evaluation – FMR@FNMR = (0.002, 0.005) and 95% Confidence Intervals

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

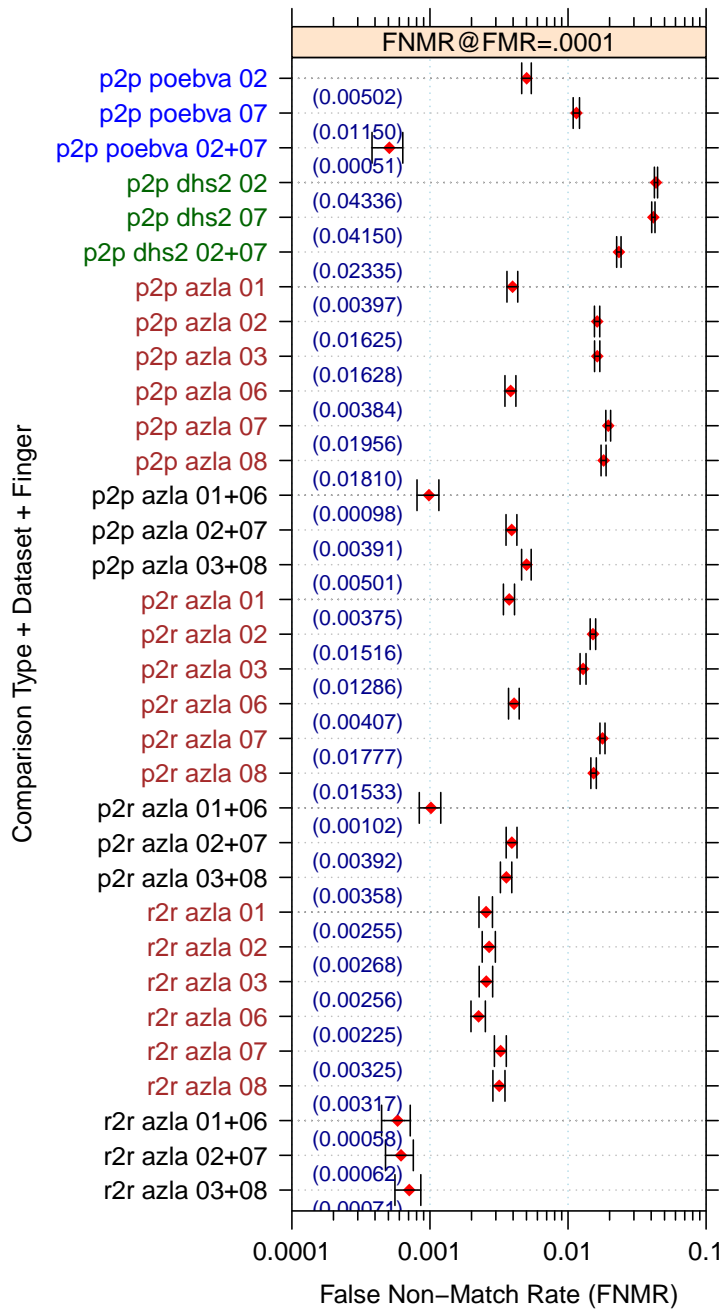


Figure 7: Full Evaluation – FNMR@FMR = 0.0001 and 95% Confidence Intervals

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>	0.0027	0.0000
	<i>R Index</i>	0.0078	0.0000
	<i>R Middle</i>	0.0092	0.0000
	<i>L Thumb</i>	0.0025	0.0000
	<i>L Index</i>	0.0100	0.0000
	<i>L Middle</i>	0.0107	0.0000
	<i>R/L Thumb</i>	0.0008	0.0000
	<i>R/L Index</i>	0.0021	0.0000
	<i>R/L Middle</i>	0.0037	0.0000
Plain to Rolled	<i>R Thumb</i>	0.0027	0.0000
	<i>R Index</i>	0.0076	0.0000
	<i>R Middle</i>	0.0073	0.0000
	<i>L Thumb</i>	0.0027	0.0000
	<i>L Index</i>	0.0093	0.0000
	<i>L Middle</i>	0.0088	0.0000
	<i>R/L Thumb</i>	0.0009	0.0000
	<i>R/L Index</i>	0.0021	0.0000
	<i>R/L Middle</i>	0.0025	0.0000
Rolled to Rolled	<i>R Thumb</i>	0.0019	0.0000
	<i>R Index</i>	0.0019	0.0000
	<i>R Middle</i>	0.0019	0.0000
	<i>L Thumb</i>	0.0019	0.0000
	<i>L Index</i>	0.0025	0.0000
	<i>L Middle</i>	0.0024	0.0000
	<i>R/L Thumb</i>	0.0006	0.0000
	<i>R/L Index</i>	0.0006	0.0000
	<i>R/L Middle</i>	0.0006	0.0000

Table 4: EER and FTE — Dataset AZLA

		EER	FTE Rate
<i>R Index</i>	0.0255	0.0000	
<i>L Index</i>	0.0230	0.0000	
<i>R/L Index</i>	0.0126	0.0000	

Table 5: EER and FTE — Dataset DHS2

		EER	FTE Rate
<i>R Index</i>	0.0027	0.0000	
<i>L Index</i>	0.0053	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>	0.0040 ±0.00036	0.0131 ±0.00064	n/a
	<i>R Index</i>	0.0163 ±0.00072	0.2441 ±0.00243	0.0425 ±0.00114
	<i>R Middle</i>	0.0163 ±0.00072	0.5333 ±0.00282	0.1590 ±0.00207
	<i>L Thumb</i>	0.0038 ±0.00035	0.0153 ±0.00069	n/a
	<i>L Index</i>	0.0196 ±0.00078	0.3917 ±0.00276	0.0992 ±0.00169
	<i>L Middle</i>	0.0181 ±0.00075	0.5878 ±0.00279	0.2001 ±0.00226
	<i>R/L Thumb</i>	0.0010 ±0.00018	n/a	n/a
	<i>R/L Index</i>	0.0039 ±0.00035	0.0027 ±0.00029	n/a
	<i>R/L Middle</i>	0.0050 ±0.00040	0.1619 ±0.00208	0.0001 ±0.00006
Plain to Rolled	<i>R Thumb</i>	0.0037 ±0.00035	0.0179 ±0.00075	n/a
	<i>R Index</i>	0.0152 ±0.00069	0.3835 ±0.00275	0.0473 ±0.00120
	<i>R Middle</i>	0.0129 ±0.00064	0.3850 ±0.00275	0.0436 ±0.00115
	<i>L Thumb</i>	0.0041 ±0.00036	0.0298 ±0.00096	n/a
	<i>L Index</i>	0.0178 ±0.00075	0.4183 ±0.00279	0.0852 ±0.00158
	<i>L Middle</i>	0.0153 ±0.00069	0.5327 ±0.00282	0.0976 ±0.00168
	<i>R/L Thumb</i>	0.0010 ±0.00018	n/a	n/a
	<i>R/L Index</i>	0.0039 ±0.00035	0.0025 ±0.00028	n/a
	<i>R/L Middle</i>	0.0036 ±0.00034	0.0119 ±0.00061	n/a
Rolled to Rolled	<i>R Thumb</i>	0.0026 ±0.00028	0.0016 ±0.00023	n/a
	<i>R Index</i>	0.0027 ±0.00029	0.0016 ±0.00023	n/a
	<i>R Middle</i>	0.0026 ±0.00029	0.0014 ±0.00021	n/a
	<i>L Thumb</i>	0.0022 ±0.00027	0.0008 ±0.00016	n/a
	<i>L Index</i>	0.0032 ±0.00032	0.0147 ±0.00068	n/a
	<i>L Middle</i>	0.0032 ±0.00032	0.0104 ±0.00057	n/a
	<i>R/L Thumb</i>	0.0006 ±0.00014	n/a	n/a
	<i>R/L Index</i>	0.0006 ±0.00014	n/a	n/a
	<i>R/L Middle</i>	0.0007 ±0.00015	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>	0.0434 ±0.00115	n/a	n/a
<i>L Index</i>	0.0415 ±0.00113	n/a	n/a
<i>R/L Index</i>	0.0233 ±0.00085	n/a	n/a

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

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>	0.0050 ±0.00040	0.0115 ±0.00060	0.0001 ±0.00006
<i>L Index</i>	0.0115 ±0.00060	0.2432 ±0.00243	0.0075 ±0.00049
<i>R/L Index</i>	0.0005 ±0.00013	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

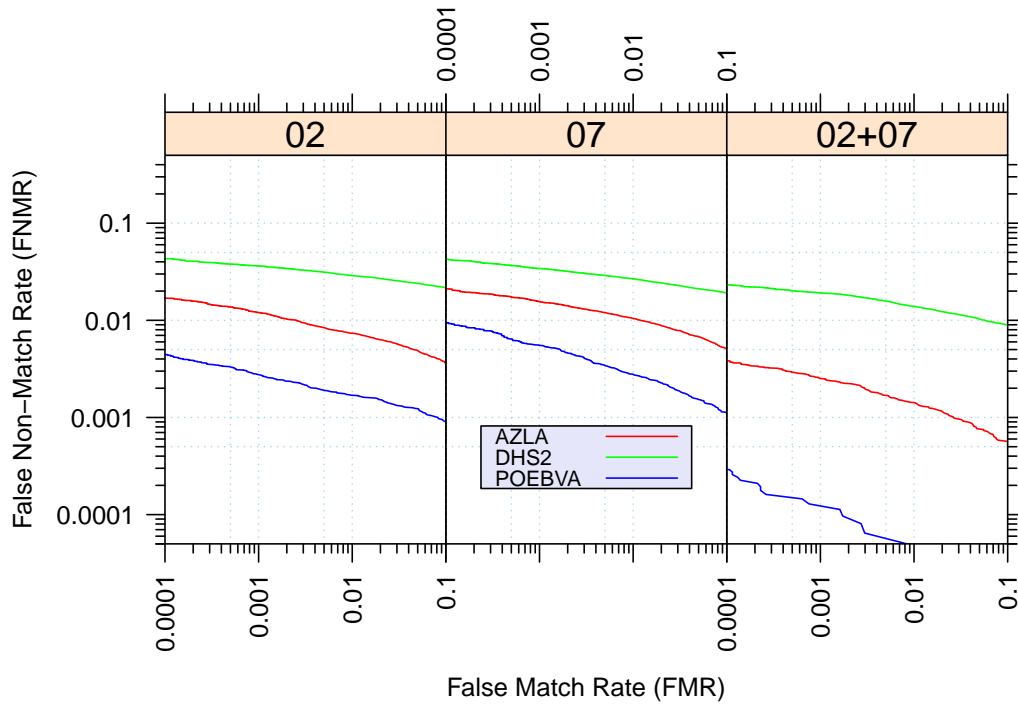


Figure 8: Original PFT Dataset – DET

		EER	FNMR@FMR = 0.0001	FMR@FNMR = 0.005
AZLA	<i>R Index</i>	0.0077	0.0169	0.0451
	<i>L Index</i>	0.0104	0.0210	0.1029
	<i>R/L Index</i>	0.0022	0.0038	n/a
DHS2	<i>R Index</i>	0.0260	0.0431	0.9817
	<i>L Index</i>	0.0237	0.0423	0.9847
	<i>R/L Index</i>	0.0133	0.0232	0.9916
POEBVA	<i>R Index</i>	0.0023	0.0044	n/a
	<i>L Index</i>	0.0037	0.0094	0.0017
	<i>R/L Index</i>	0.0002	0.0003	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.