

# Participant Results

Proprietary Fingerprint Template Evaluation II (PFT-II)

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Image Group

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# 1 1K Sample Evaluation

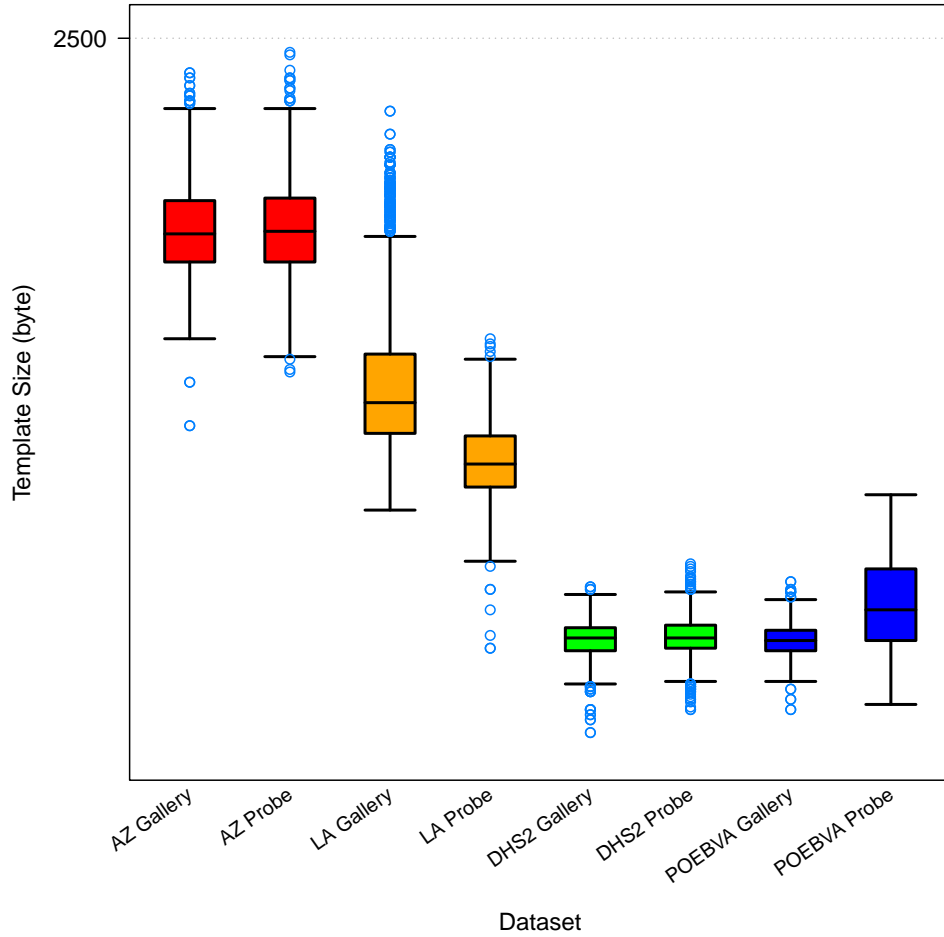


Figure 1: 1K Sample Evaluation – Template Size Distribution

	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>	2392	2456	2272	1560	784	856	800	1072
75%	1992	2000	1512	1256	656	664	648	840
<i>Median</i>	1888	1896	1360	1168	624	624	616	712
25%	1800	1800	1264	1096	584	592	584	616
<i>Minimum</i>	1288	1456	1024	592	328	400	400	416

Table 1: Sample Dataset — Template Size Distribution

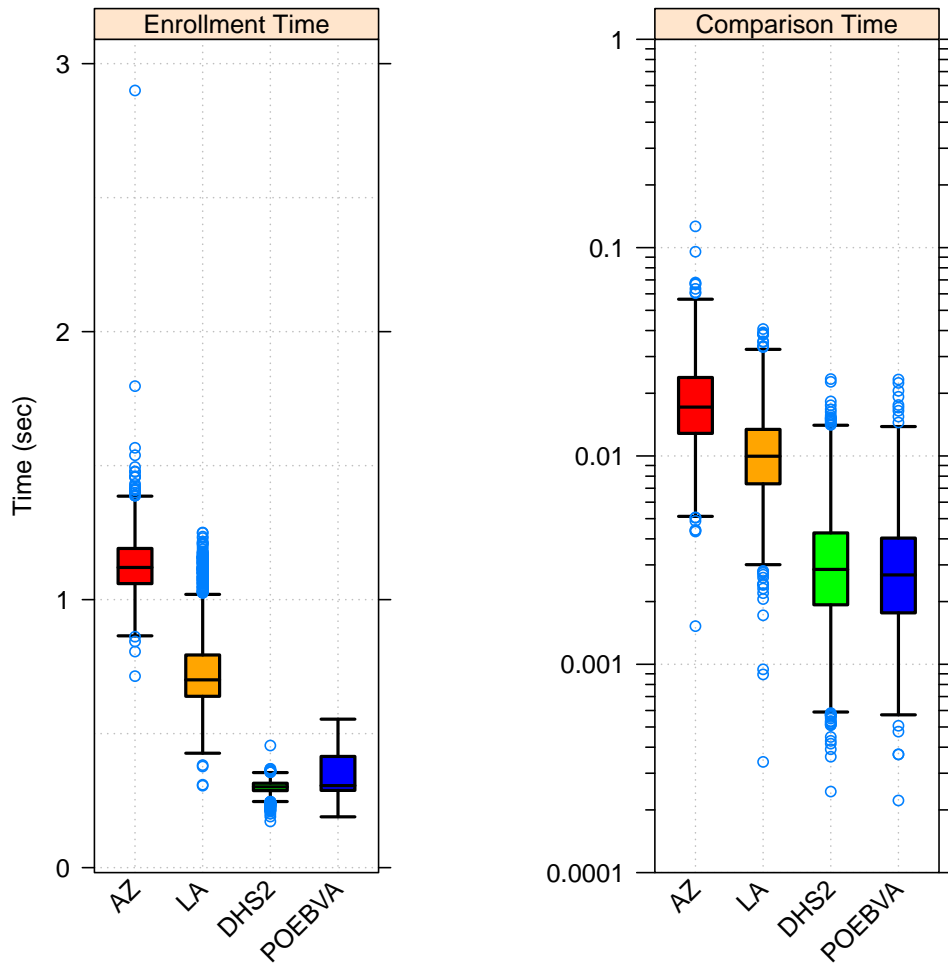


Figure 2: 1K Sample Evaluation – Enrollment and Comparison Timing

	AZ	LA	DHS2	POEBVA
<i>Maximum</i>	2.900	1.251	0.456	0.554
<i>75%</i>	1.191	0.794	0.315	0.415
<i>Median</i>	1.120	0.701	0.301	0.306
<i>25%</i>	1.060	0.639	0.287	0.288
<i>Minimum</i>	0.715	0.306	0.172	0.190

Table 2: Enrollment Times (sec)

	AZ	LA	DHS2	POEBVA
<i>Maximum</i>	0.127	0.041	0.023	0.023
<i>75%</i>	0.024	0.013	0.004	0.004
<i>Median</i>	0.017	0.010	0.003	0.003
<i>25%</i>	0.013	0.007	0.002	0.002
<i>Minimum</i>	0.002	0.000	0.000	0.000

Table 3: Comparison Times (sec)

## 2 Full Evaluation

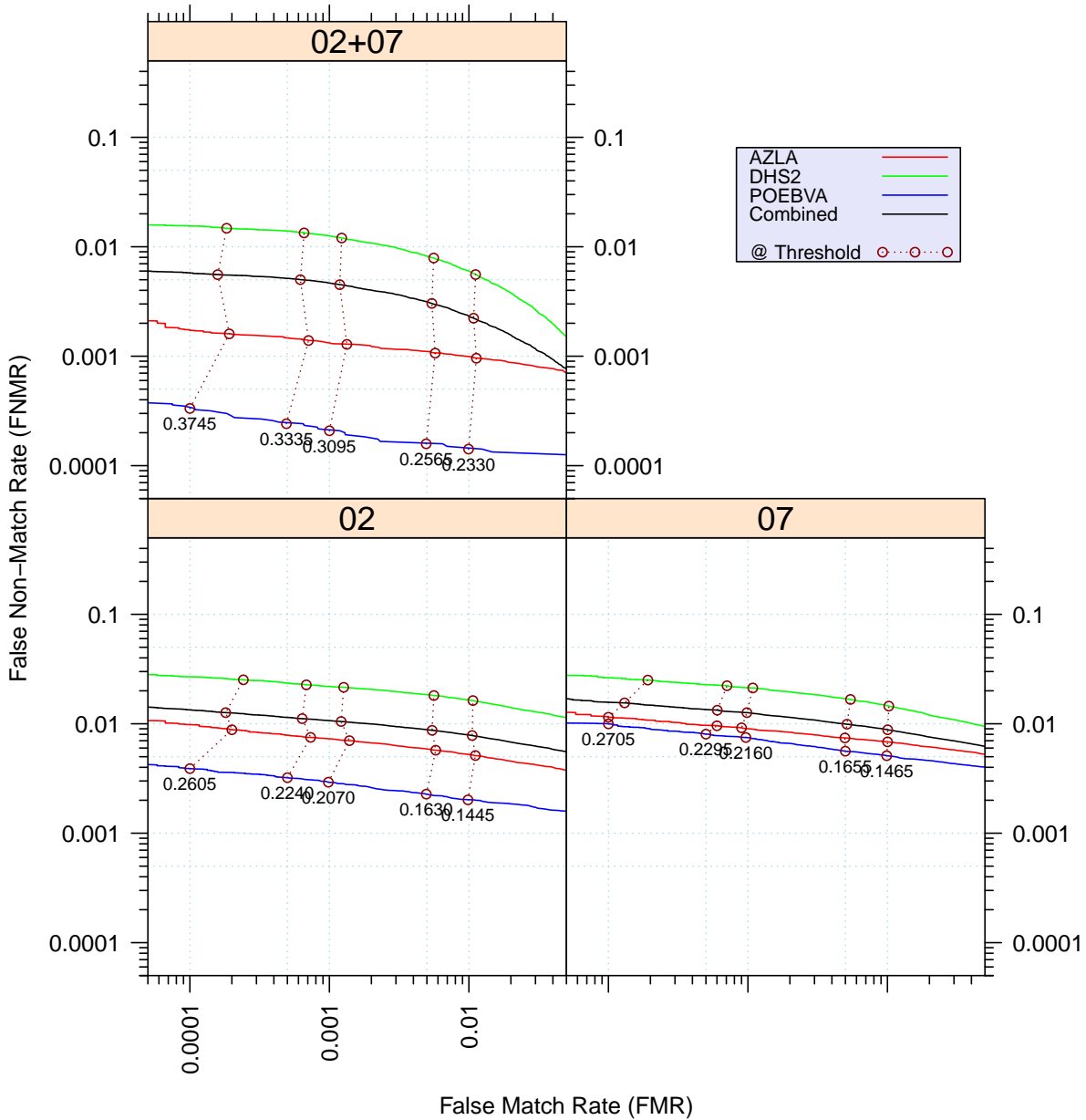


Figure 3: Full Evaluation – DET for POEBVA, DHS2, AZLA, and combined from R Index, L Index, and R/L Index

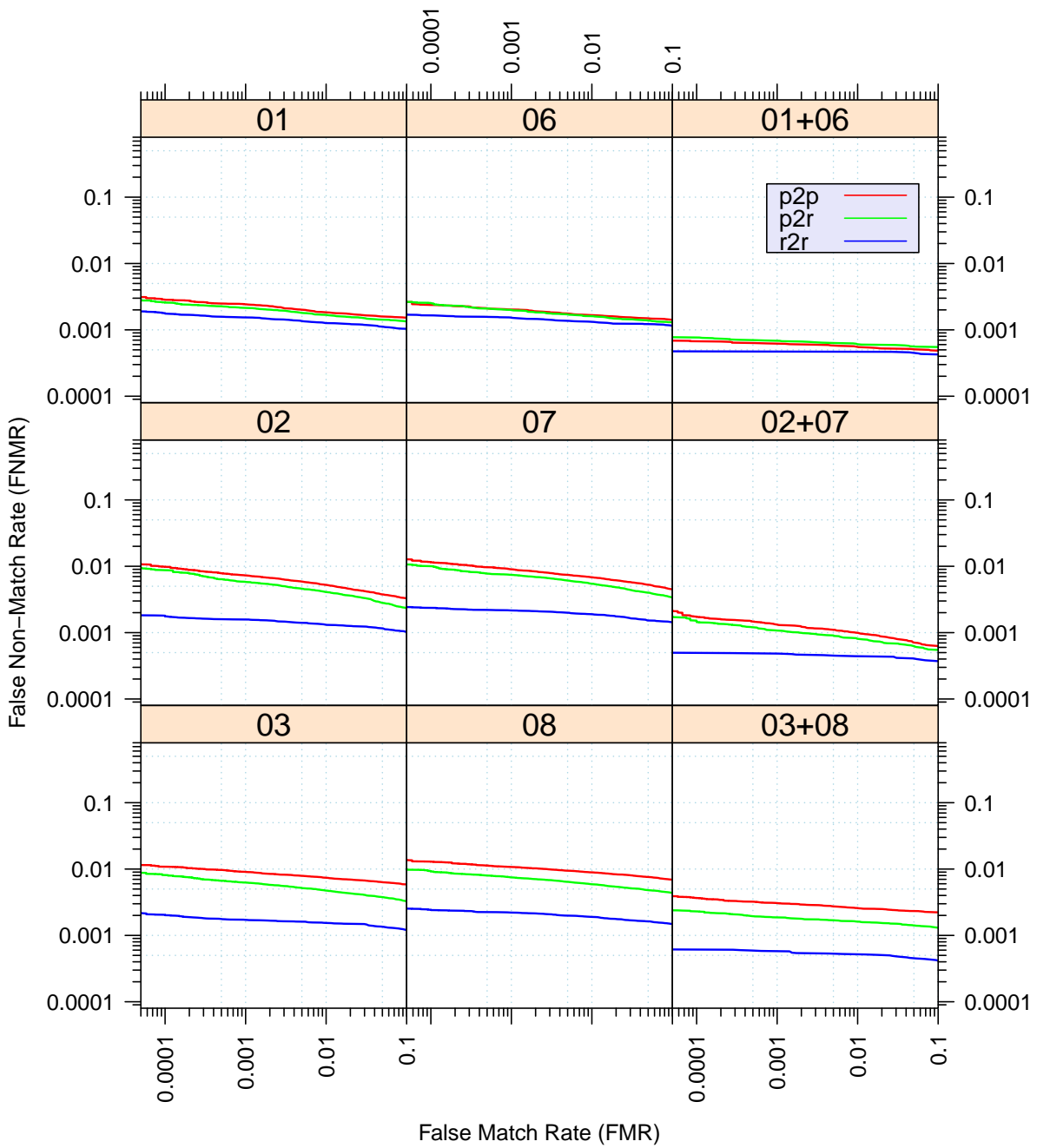


Figure 4: Full Evaluation – DET for all finger positions from AZLA

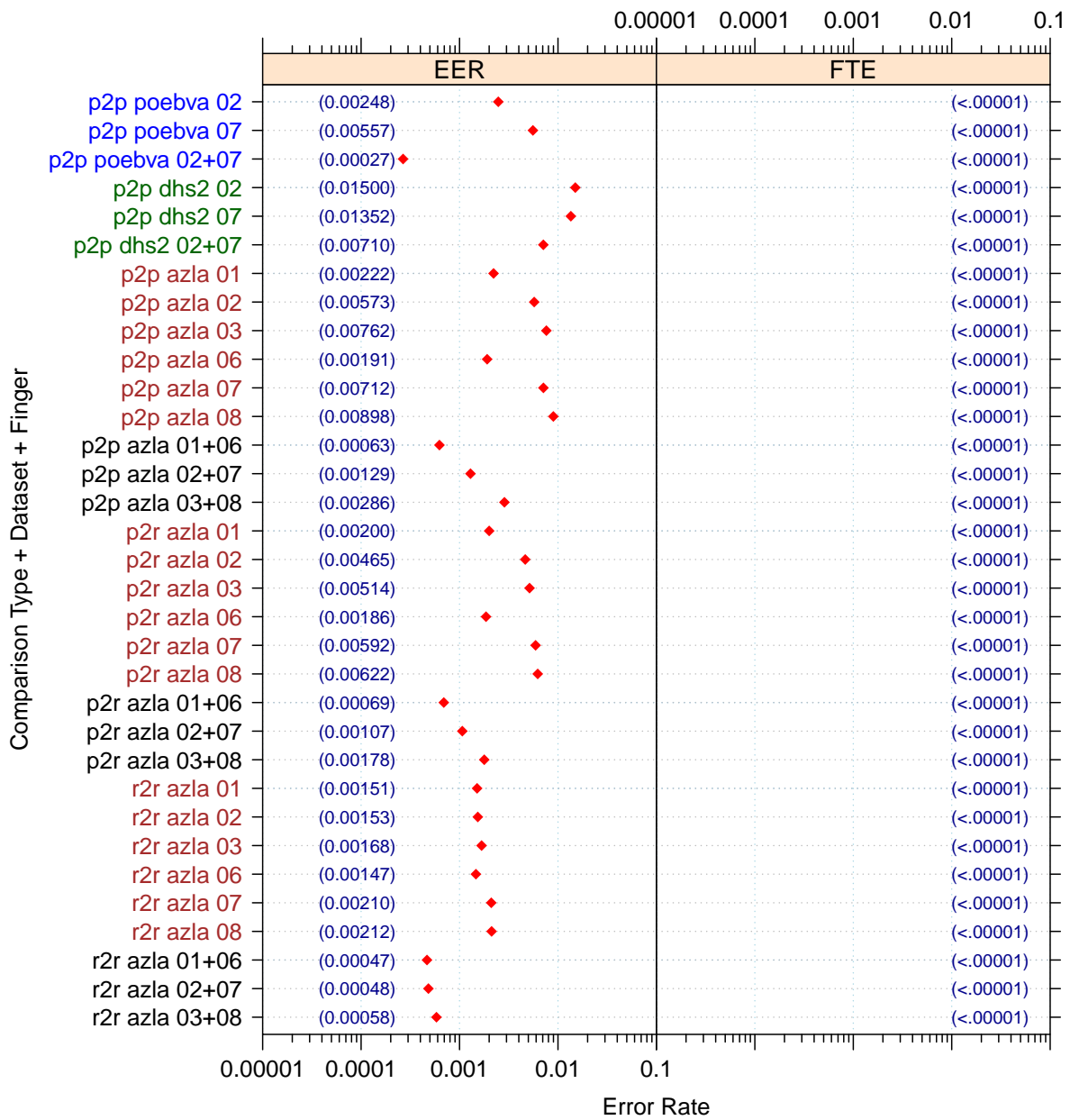


Figure 5: Full Evaluation – EERs and FTEs

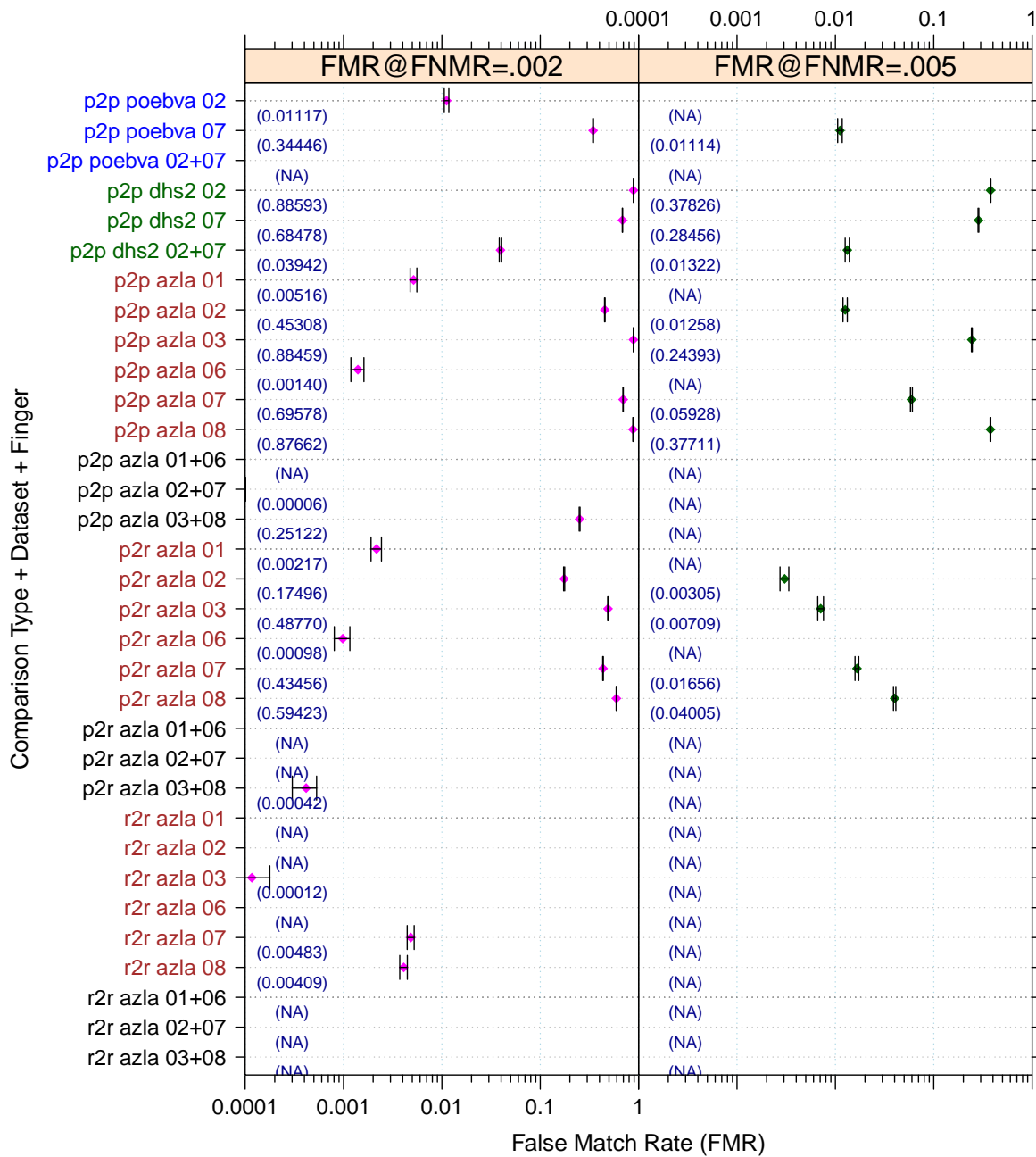


Figure 6: Full Evaluation – FMR@FNMR = (0.002, 0.005) and 95% Confidence Intervals

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



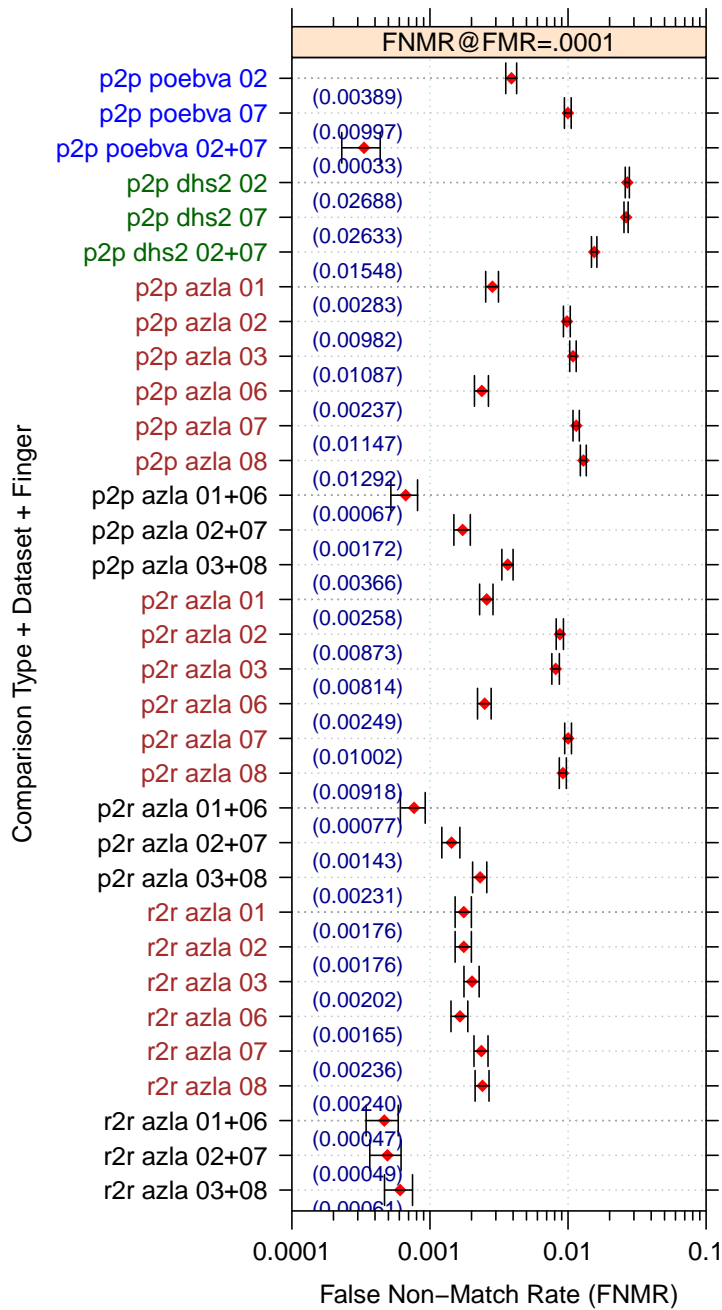


Figure 7: Full Evaluation – FNMR@FMR = 0.0001 and 95% Confidence Intervals

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

		<b>EER</b>	<b>FTE Rate</b>
<b>Plain to Plain</b>	<i>R Thumb</i>	0.0022	0.0000
	<i>R Index</i>	0.0057	0.0000
	<i>R Middle</i>	0.0076	0.0000
	<i>L Thumb</i>	0.0019	0.0000
	<i>L Index</i>	0.0071	0.0000
	<i>L Middle</i>	0.0090	0.0000
	<i>R/L Thumb</i>	0.0006	0.0000
	<i>R/L Index</i>	0.0013	0.0000
	<i>R/L Middle</i>	0.0029	0.0000
<b>Plain to Rolled</b>	<i>R Thumb</i>	0.0020	0.0000
	<i>R Index</i>	0.0046	0.0000
	<i>R Middle</i>	0.0051	0.0000
	<i>L Thumb</i>	0.0019	0.0000
	<i>L Index</i>	0.0059	0.0000
	<i>L Middle</i>	0.0062	0.0000
	<i>R/L Thumb</i>	0.0007	0.0000
	<i>R/L Index</i>	0.0011	0.0000
	<i>R/L Middle</i>	0.0018	0.0000
<b>Rolled to Rolled</b>	<i>R Thumb</i>	0.0015	0.0000
	<i>R Index</i>	0.0015	0.0000
	<i>R Middle</i>	0.0017	0.0000
	<i>L Thumb</i>	0.0015	0.0000
	<i>L Index</i>	0.0021	0.0000
	<i>L Middle</i>	0.0021	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>	0.0006	0.0000

Table 4: EER and FTE — Dataset AZLA

	<b>EER</b>	<b>FTE Rate</b>
<i>R Index</i>	0.0150	0.0000
<i>L Index</i>	0.0135	0.0000
<i>R/L Index</i>	0.0071	0.0000

Table 5: EER and FTE — Dataset DHS2

	<b>EER</b>	<b>FTE Rate</b>
<i>R Index</i>	0.0025	0.0000
<i>L Index</i>	0.0056	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>	0.0028 ±0.00030	0.0052 ±0.00040	n/a
	<i>R Index</i>	0.0098 ±0.00056	0.4531 ±0.00282	0.0126 ±0.00063
	<i>R Middle</i>	0.0109 ±0.00059	0.8846 ±0.00181	0.2439 ±0.00243
	<i>L Thumb</i>	0.0024 ±0.00028	0.0014 ±0.00021	n/a
	<i>L Index</i>	0.0115 ±0.00060	0.6958 ±0.00260	0.0593 ±0.00134
	<i>L Middle</i>	0.0129 ±0.00064	0.8766 ±0.00186	0.3771 ±0.00274
	<i>R/L Thumb</i>	0.0007 ±0.00015	n/a	n/a
	<i>R/L Index</i>	0.0017 ±0.00023	n/a	n/a
	<i>R/L Middle</i>	0.0037 ±0.00034	0.2512 ±0.00245	n/a
Plain to Rolled	<i>R Thumb</i>	0.0026 ±0.00029	0.0022 ±0.00026	n/a
	<i>R Index</i>	0.0087 ±0.00053	0.1750 ±0.00215	0.0031 ±0.00031
	<i>R Middle</i>	0.0081 ±0.00051	0.4877 ±0.00283	0.0071 ±0.00047
	<i>L Thumb</i>	0.0025 ±0.00028	0.0010 ±0.00018	n/a
	<i>L Index</i>	0.0100 ±0.00056	0.4346 ±0.00281	0.0166 ±0.00072
	<i>L Middle</i>	0.0092 ±0.00054	0.5942 ±0.00278	0.0401 ±0.00111
	<i>R/L Thumb</i>	0.0008 ±0.00016	n/a	n/a
	<i>R/L Index</i>	0.0014 ±0.00021	n/a	n/a
	<i>R/L Middle</i>	0.0023 ±0.00027	0.0004 ±0.00012	n/a
Rolled to Rolled	<i>R Thumb</i>	0.0018 ±0.00024	n/a	n/a
	<i>R Index</i>	0.0018 ±0.00024	n/a	n/a
	<i>R Middle</i>	0.0020 ±0.00025	0.0001 ±0.00006	n/a
	<i>L Thumb</i>	0.0016 ±0.00023	n/a	n/a
	<i>L Index</i>	0.0024 ±0.00027	0.0048 ±0.00039	n/a
	<i>L Middle</i>	0.0024 ±0.00028	0.0041 ±0.00036	n/a
	<i>R/L Thumb</i>	0.0005 ±0.00012	n/a	n/a
	<i>R/L Index</i>	0.0005 ±0.00013	n/a	n/a
	<i>R/L Middle</i>	0.0006 ±0.00014	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.

	<b>FNMR@FMR = 0.0001</b>	<b>FMR@FNMR = 0.002</b>	<b>FMR@FNMR = 0.005</b>
<i>R Index</i>	0.0269 ±0.00092	0.8859 ±0.00180	0.3783 ±0.00274
<i>L Index</i>	0.0263 ±0.00091	0.6848 ±0.00263	0.2846 ±0.00255
<i>R/L Index</i>	0.0155 ±0.00070	0.0394 ±0.00110	0.0132 ±0.00065

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

	<b>FNMR@FMR = 0.0001</b>	<b>FMR@FNMR = 0.002</b>	<b>FMR@FNMR = 0.005</b>
<i>R Index</i>	0.0039 ±0.00035	0.0112 ±0.00060	n/a
<i>L Index</i>	0.0100 ±0.00056	0.3445 ±0.00269	0.0111 ±0.00059
<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

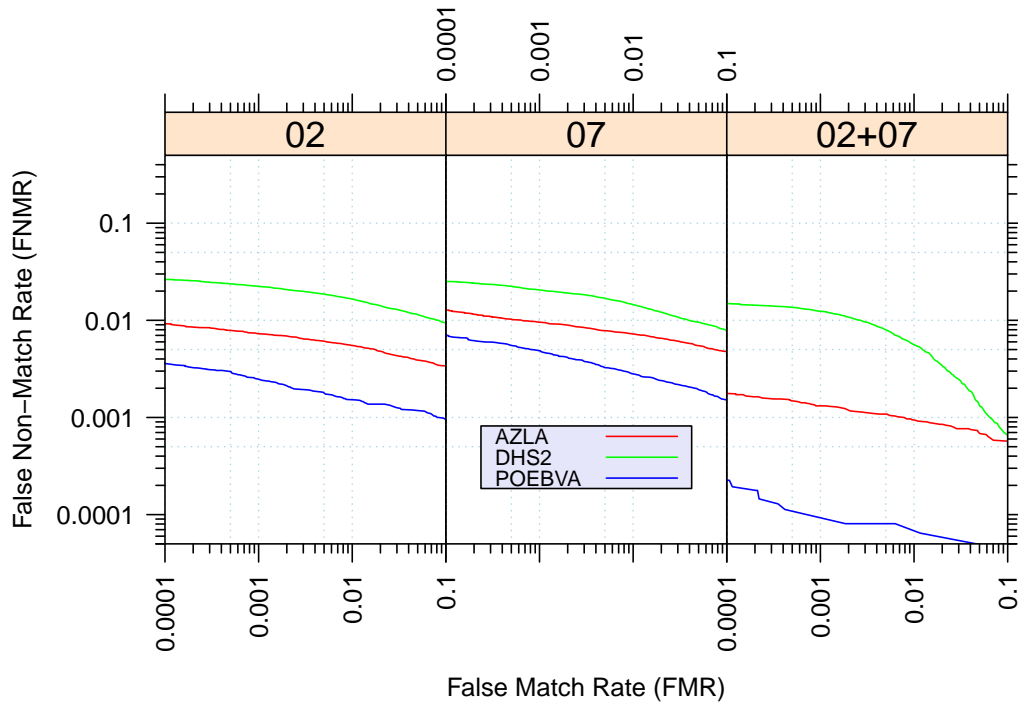


Figure 8: Original PFT Dataset – DET

		EER	FNMR@FMR = 0.0001	FMR@FNMR = 0.005
<b>AZLA</b>	<i>R Index</i>	0.0059	0.0092	0.0173
	<i>L Index</i>	0.0075	0.0127	0.0727
	<i>R/L Index</i>	0.0013	0.0018	n/a
<b>DHS2</b>	<i>R Index</i>	0.0150	0.0264	0.3247
	<i>L Index</i>	0.0135	0.0251	0.2669
	<i>R/L Index</i>	0.0068	0.0149	0.0123
<b>POEBVA</b>	<i>R Index</i>	0.0021	0.0036	n/a
	<i>L Index</i>	0.0036	0.0070	0.0008
	<i>R/L Index</i>	0.0002	0.0002	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.