

Participant Results

Proprietary Fingerprint Template Evaluation II (PFT-II)

Participant 3X — Innovatrics

Image Group

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1 1K Sample Evaluation

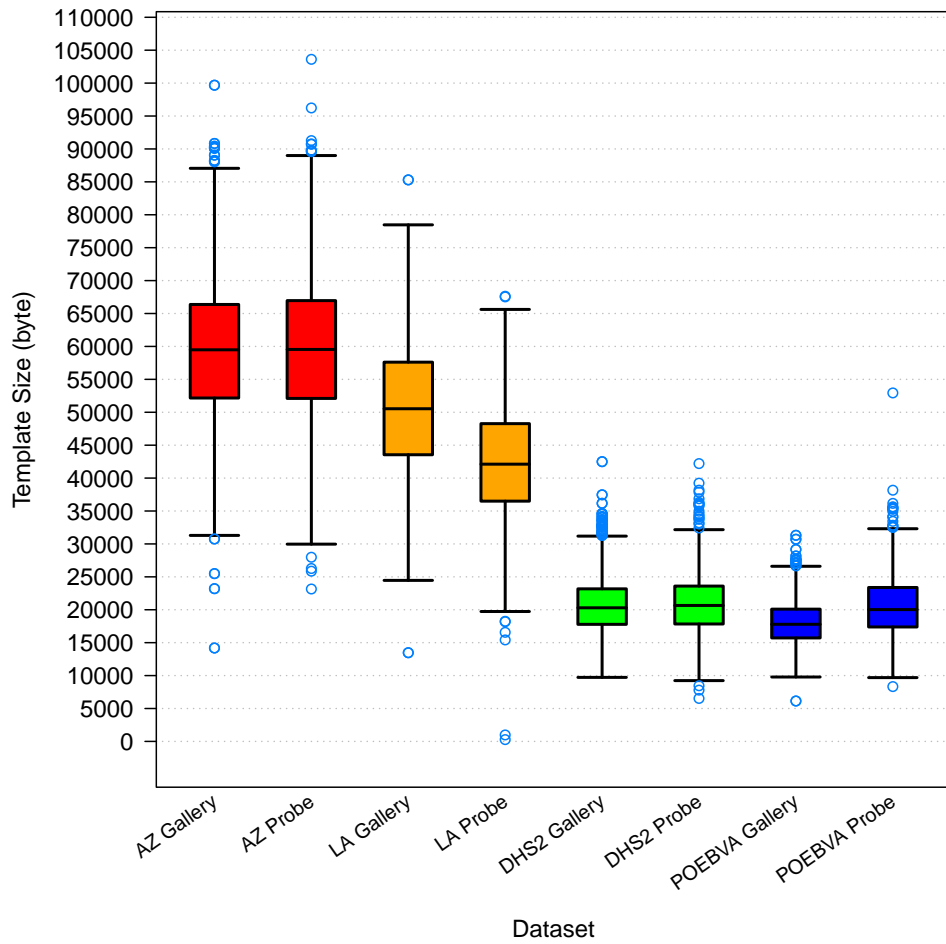


Figure 1: 1K Sample Evaluation – Template Size Distribution

	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>	99682	103616	85300	67624	42498	42206	31310	52938
75%	66375	66961	57611	48271	23177	23594	20091	23382
<i>Median</i>	59487	59541	50535	42114	20295	20651	17789	20027
25%	52164	52102	43547	36498	17782	17839	15720	17386
<i>Minimum</i>	14192	23154	13476	278	9726	6532	6140	8332

Table 1: Sample Dataset — Template Size Distribution

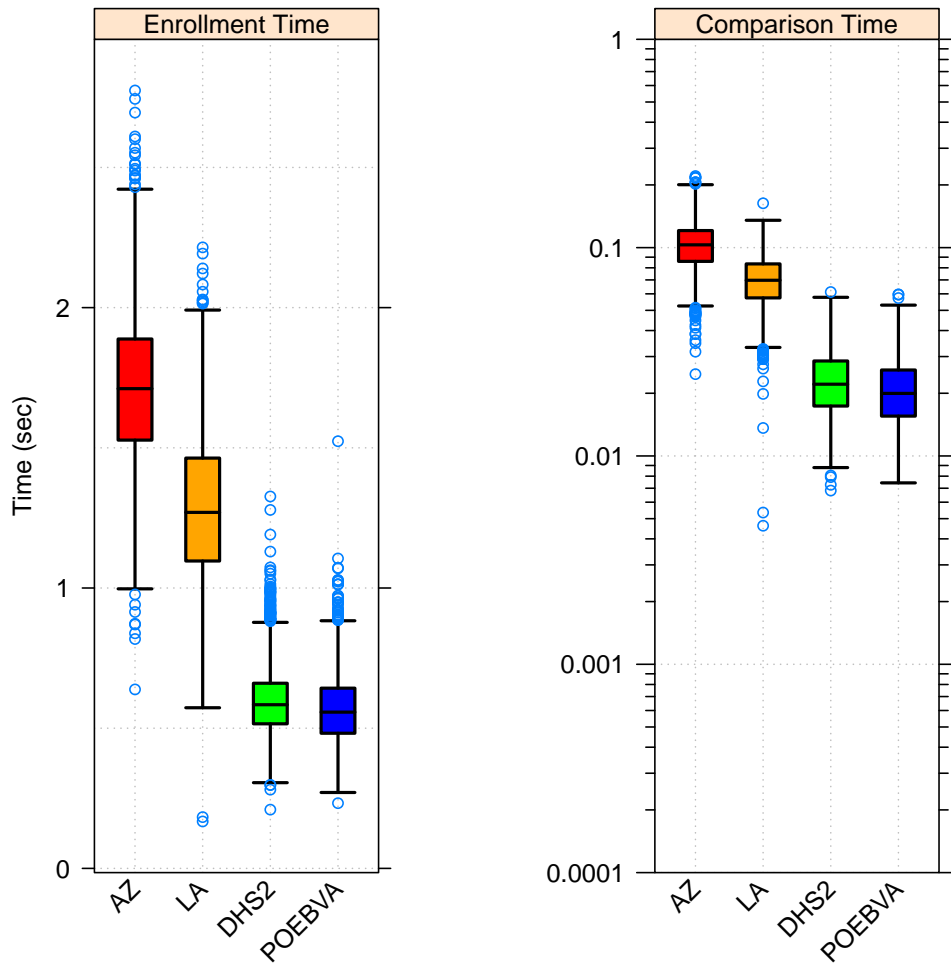


Figure 2: 1K Sample Evaluation – Enrollment and Comparison Timing

	AZ	LA	DHS2	POEBVA
<i>Maximum</i>	2.775	2.215	1.326	1.524
<i>75%</i>	1.888	1.463	0.660	0.643
<i>Median</i>	1.711	1.270	0.584	0.557
<i>25%</i>	1.527	1.096	0.516	0.482
<i>Minimum</i>	0.638	0.167	0.210	0.233

Table 2: Enrollment Times (sec)

	AZ	LA	DHS2	POEBVA
<i>Maximum</i>	0.221	0.163	0.061	0.060
<i>75%</i>	0.121	0.084	0.029	0.026
<i>Median</i>	0.103	0.070	0.022	0.020
<i>25%</i>	0.086	0.057	0.017	0.016
<i>Minimum</i>	0.025	0.005	0.007	0.007

Table 3: Comparison Times (sec)

2 Full Evaluation

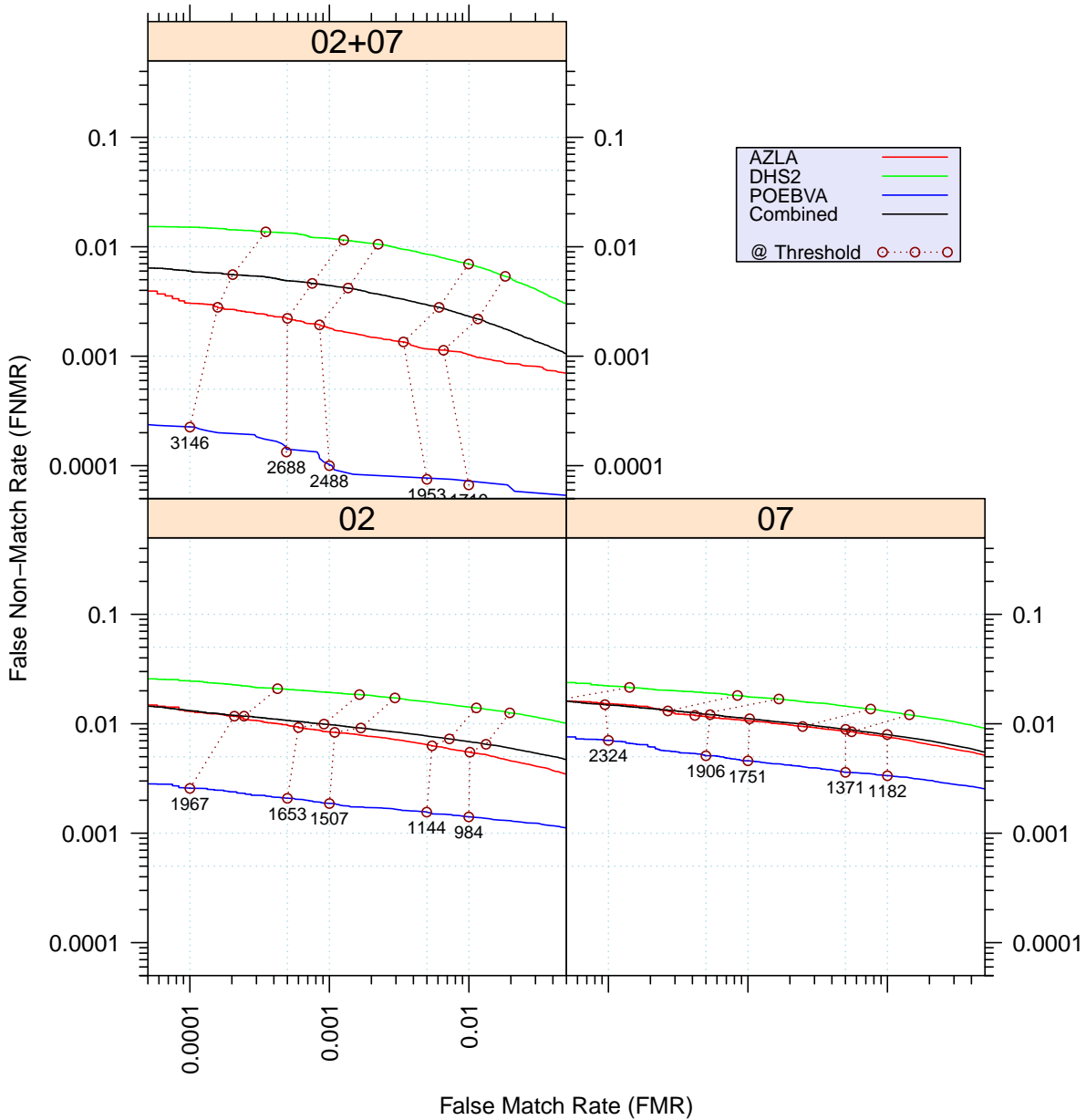


Figure 3: Full Evaluation – DET for POEBVA, DHS2, AZLA, and combined from R Index, L Index, and R/L Index

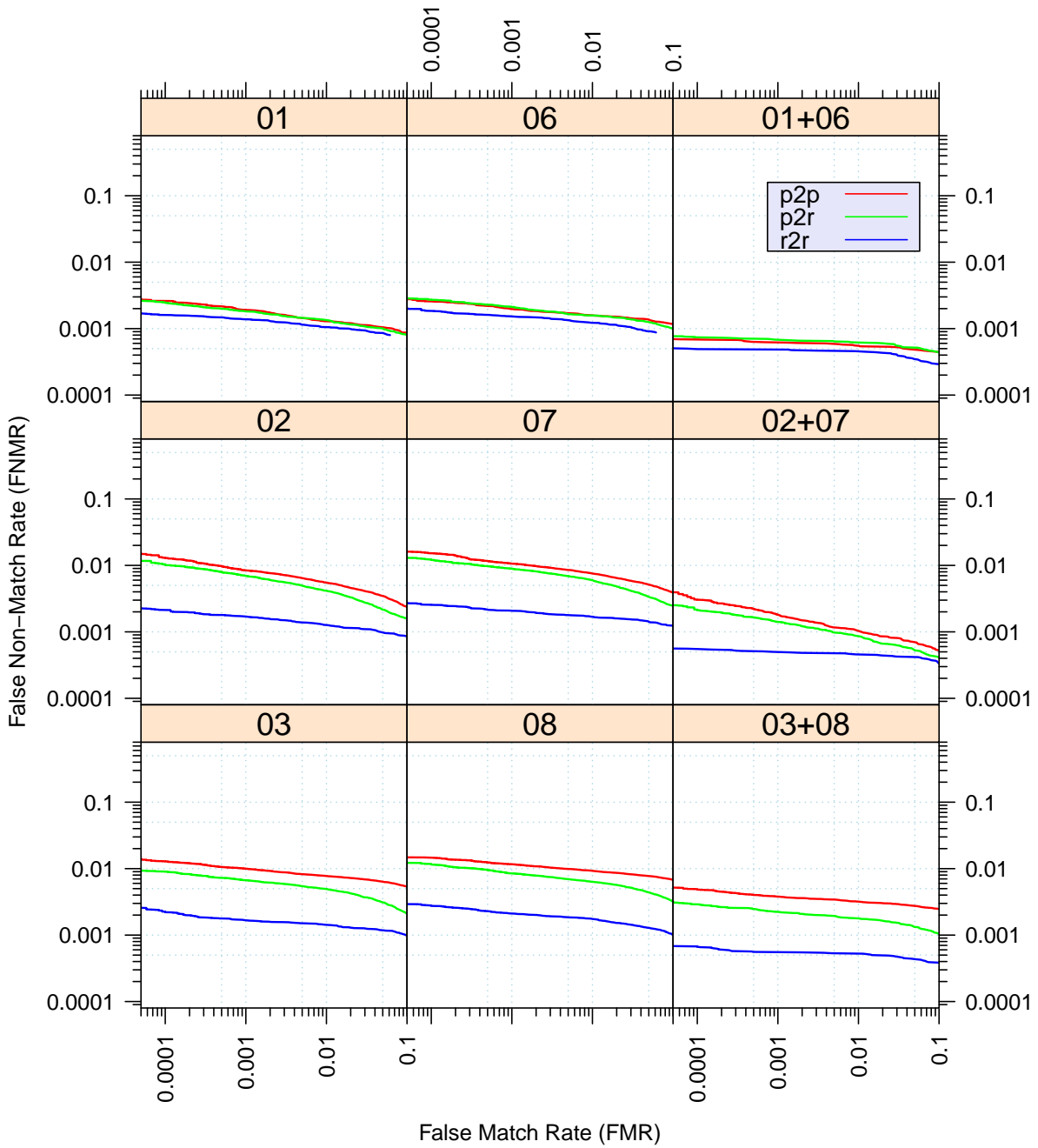


Figure 4: Full Evaluation – DET for all finger positions from AZLA

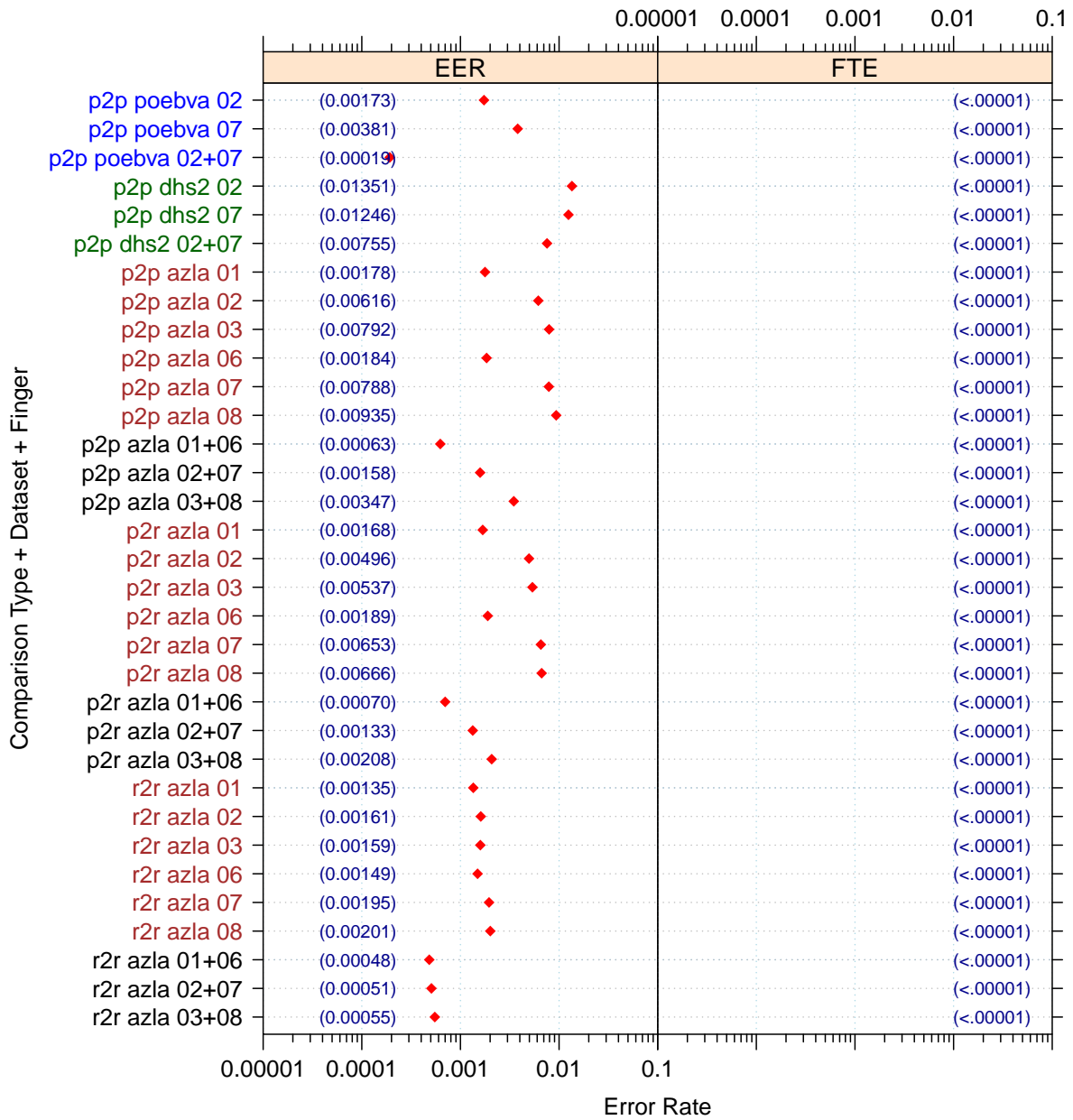


Figure 5: Full Evaluation – EERs and FTEs

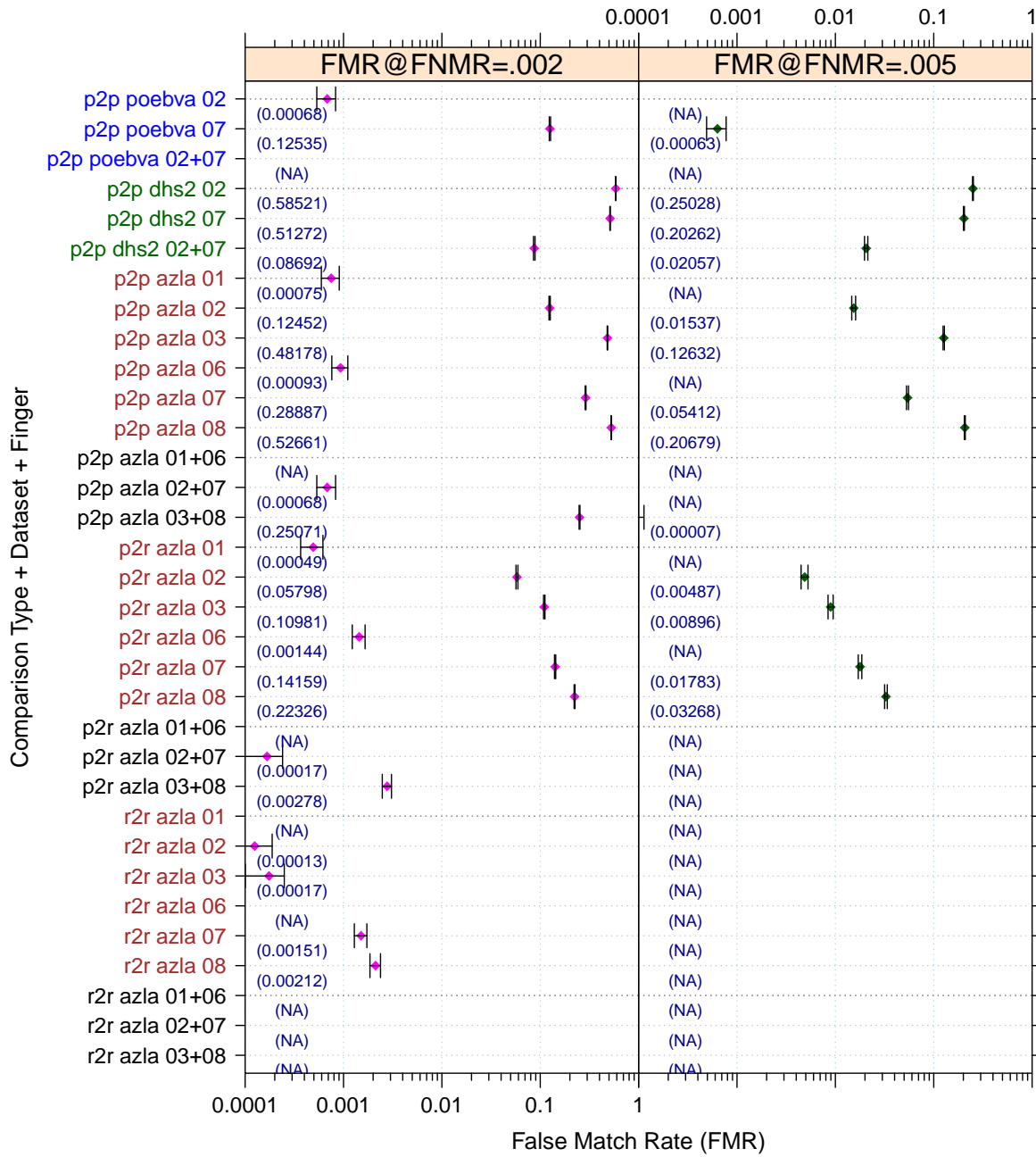


Figure 6: Full Evaluation – FMR@FNMR = (0.002, 0.005) and 95% Confidence Intervals

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

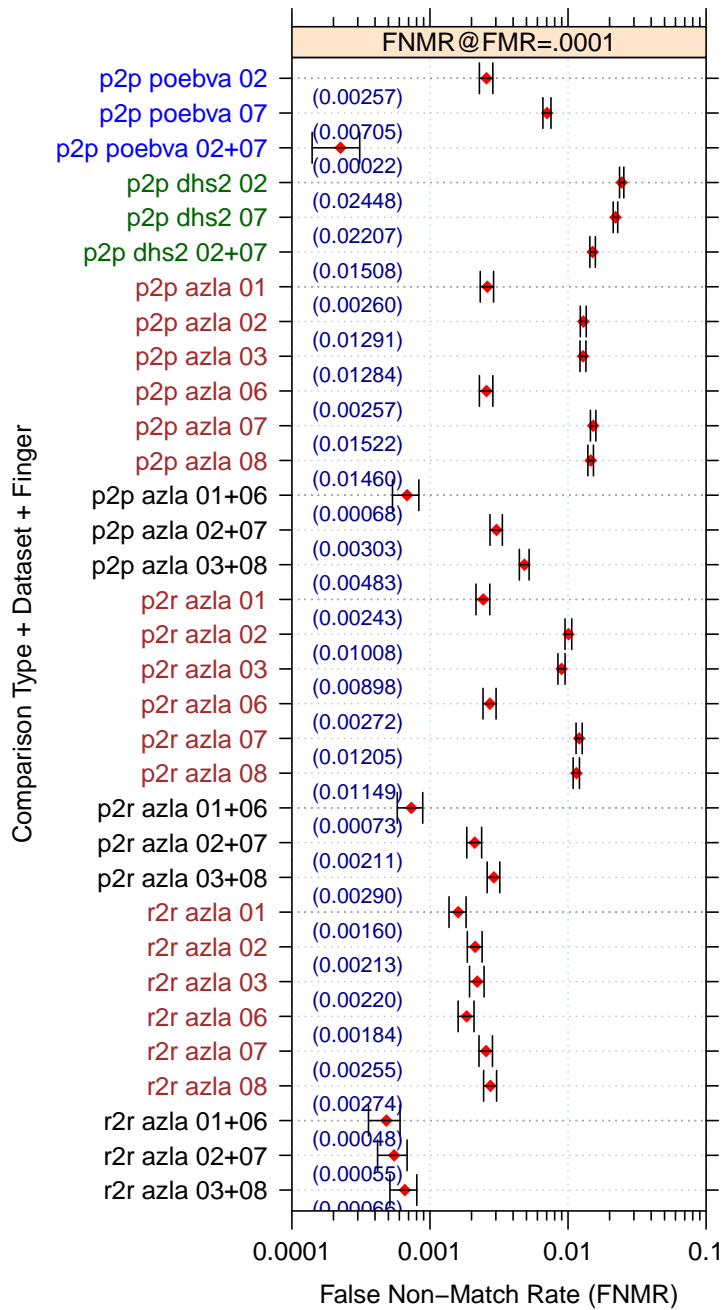


Figure 7: Full Evaluation – FNMR@FMR = 0.0001 and 95% Confidence Intervals

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>	0.0018	0.0000
	<i>R Index</i>	0.0062	0.0000
	<i>R Middle</i>	0.0079	0.0000
	<i>L Thumb</i>	0.0018	0.0000
	<i>L Index</i>	0.0079	0.0000
	<i>L Middle</i>	0.0094	0.0000
	<i>R/L Thumb</i>	0.0006	0.0000
	<i>R/L Index</i>	0.0016	0.0000
	<i>R/L Middle</i>	0.0035	0.0000
Plain to Rolled	<i>R Thumb</i>	0.0017	0.0000
	<i>R Index</i>	0.0050	0.0000
	<i>R Middle</i>	0.0054	0.0000
	<i>L Thumb</i>	0.0019	0.0000
	<i>L Index</i>	0.0065	0.0000
	<i>L Middle</i>	0.0067	0.0000
	<i>R/L Thumb</i>	0.0007	0.0000
	<i>R/L Index</i>	0.0013	0.0000
	<i>R/L Middle</i>	0.0021	0.0000
Rolled to Rolled	<i>R Thumb</i>	0.0014	0.0000
	<i>R Index</i>	0.0016	0.0000
	<i>R Middle</i>	0.0016	0.0000
	<i>L Thumb</i>	0.0015	0.0000
	<i>L Index</i>	0.0019	0.0000
	<i>L Middle</i>	0.0020	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

		EER	FTE Rate
<i>R Index</i>	0.0135	0.0000	
<i>L Index</i>	0.0125	0.0000	
<i>R/L Index</i>	0.0076	0.0000	

Table 5: EER and FTE — Dataset DHS2

		EER	FTE Rate
<i>R Index</i>	0.0017	0.0000	
<i>L Index</i>	0.0038	0.0000	
<i>R/L Index</i>	0.0002	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>	0.0026 ±0.00029	0.0008 ±0.00015	n/a
	<i>R Index</i>	0.0129 ±0.00064	0.1245 ±0.00187	0.0154 ±0.00070
	<i>R Middle</i>	0.0128 ±0.00064	0.4818 ±0.00283	0.1263 ±0.00188
	<i>L Thumb</i>	0.0026 ±0.00029	0.0009 ±0.00017	n/a
	<i>L Index</i>	0.0152 ±0.00069	0.2889 ±0.00256	0.0541 ±0.00128
	<i>L Middle</i>	0.0146 ±0.00068	0.5266 ±0.00282	0.2068 ±0.00229
	<i>R/L Thumb</i>	0.0007 ±0.00015	n/a	n/a
	<i>R/L Index</i>	0.0030 ±0.00031	0.0007 ±0.00015	n/a
	<i>R/L Middle</i>	0.0048 ±0.00039	0.2507 ±0.00245	n/a
Plain to Rolled	<i>R Thumb</i>	0.0024 ±0.00028	0.0005 ±0.00013	n/a
	<i>R Index</i>	0.0101 ±0.00056	0.0580 ±0.00132	0.0049 ±0.00039
	<i>R Middle</i>	0.0090 ±0.00053	0.1098 ±0.00177	0.0090 ±0.00053
	<i>L Thumb</i>	0.0027 ±0.00030	0.0014 ±0.00021	n/a
	<i>L Index</i>	0.0120 ±0.00062	0.1416 ±0.00197	0.0178 ±0.00075
	<i>L Middle</i>	0.0115 ±0.00060	0.2233 ±0.00236	0.0327 ±0.00101
	<i>R/L Thumb</i>	0.0007 ±0.00015	n/a	n/a
	<i>R/L Index</i>	0.0021 ±0.00026	0.0002 ±0.00007	n/a
	<i>R/L Middle</i>	0.0029 ±0.00030	0.0028 ±0.00030	n/a
Rolled to Rolled	<i>R Thumb</i>	0.0016 ±0.00023	n/a	n/a
	<i>R Index</i>	0.0021 ±0.00026	0.0001 ±0.00006	n/a
	<i>R Middle</i>	0.0022 ±0.00026	0.0002 ±0.00007	n/a
	<i>L Thumb</i>	0.0018 ±0.00024	n/a	n/a
	<i>L Index</i>	0.0026 ±0.00028	0.0015 ±0.00022	n/a
	<i>L Middle</i>	0.0027 ±0.00030	0.0021 ±0.00026	n/a
	<i>R/L Thumb</i>	0.0005 ±0.00012	n/a	n/a
	<i>R/L Index</i>	0.0006 ±0.00013	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>	0.0245 ±0.00087	0.5852 ±0.00279	0.2503 ±0.00245
<i>L Index</i>	0.0221 ±0.00083	0.5127 ±0.00283	0.2026 ±0.00227
<i>R/L Index</i>	0.0151 ±0.00069	0.0869 ±0.00159	0.0206 ±0.00080

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>	0.0026 ±0.00029	0.0007 ±0.00015	n/a
<i>L Index</i>	0.0070 ±0.00047	0.1253 ±0.00187	0.0006 ±0.00014
<i>R/L Index</i>	0.0002 ±0.00009	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

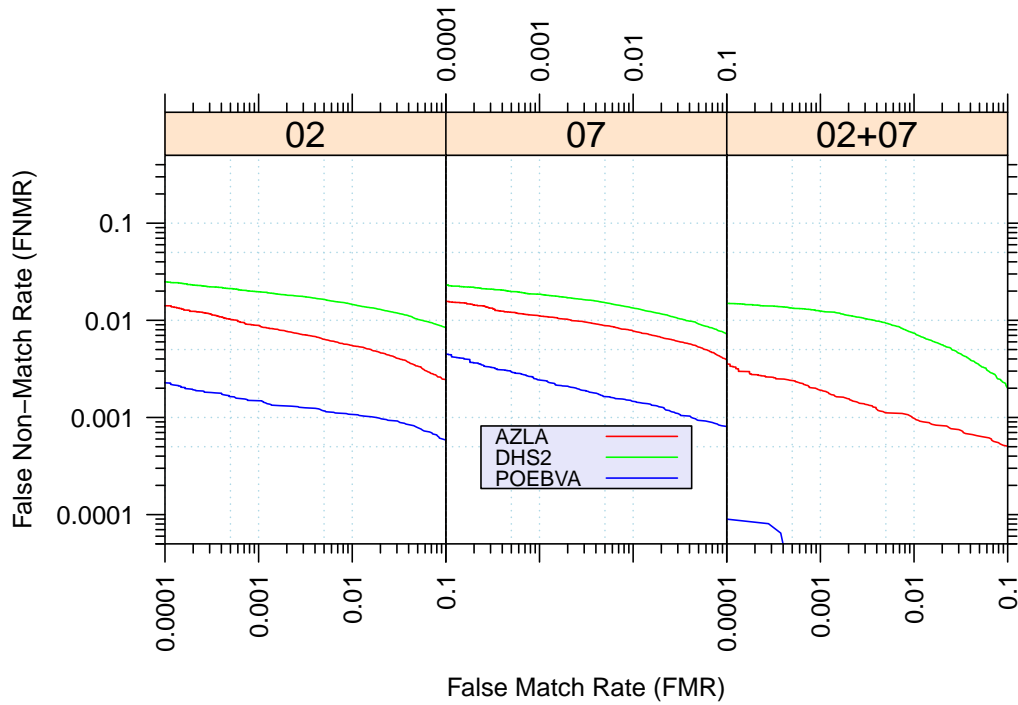


Figure 8: Original PFT Dataset – DET

		EER	FNMR@FMR = 0.0001	FMR@FNMR = 0.005
AZLA	<i>R Index</i>	0.0061	0.0141	0.0156
	<i>L Index</i>	0.0081	0.0157	0.0586
	<i>R/L Index</i>	0.0016	0.0035	n/a
DHS2	<i>R Index</i>	0.0137	0.0248	0.2928
	<i>L Index</i>	0.0127	0.0230	0.2134
	<i>R/L Index</i>	0.0080	0.0149	0.0253
POEBVA	<i>R Index</i>	0.0014	0.0023	n/a
	<i>L Index</i>	0.0020	0.0045	n/a
	<i>R/L Index</i>	n/a	n/a	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.