

Participant Results

Proprietary Fingerprint Template Evaluation II (PFT-II)

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1 1K Sample Evaluation

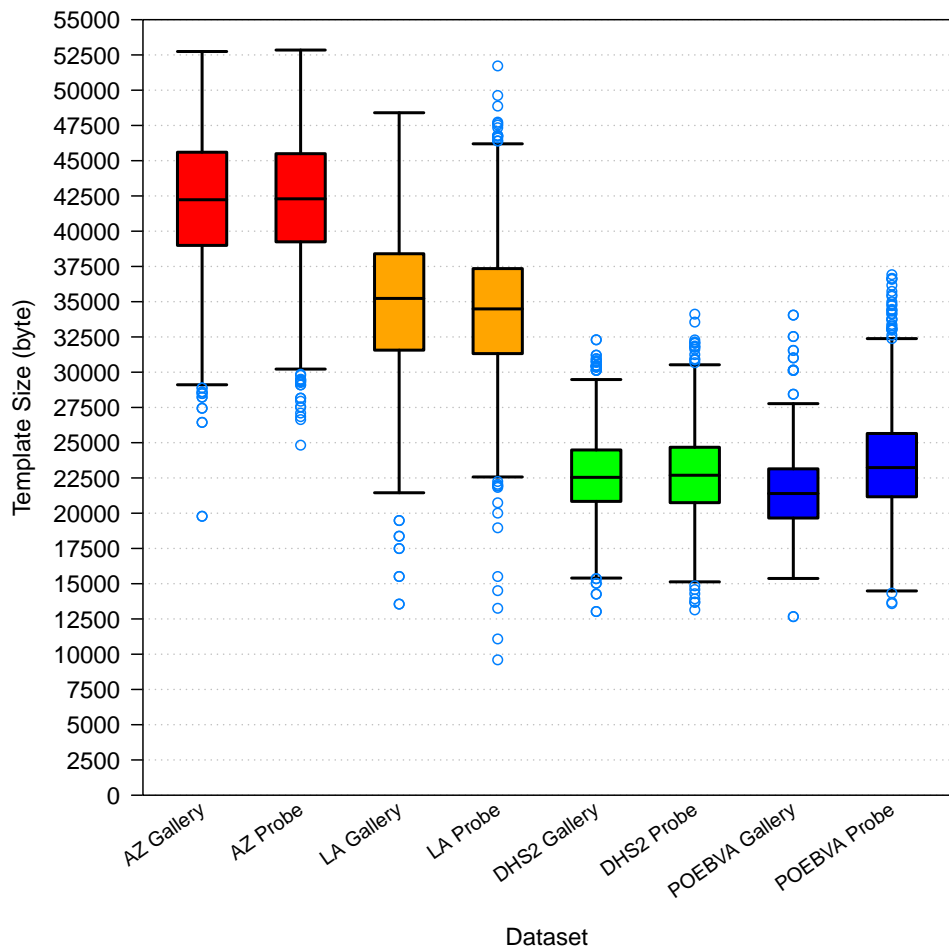


Figure 1: 1K Sample Evaluation – Template Size Distribution

| | 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> | 52743 | 52846 | 48400 | 51721 | 32298 | 34118 | 34049 | 36917 |
| 75% | 45600 | 45496.5 | 38400.5 | 37348 | 24484.5 | 24675.5 | 23145.5 | 25652.5 |
| <i>Median</i> | 42229.5 | 42295.5 | 35231.5 | 34488 | 22542.5 | 22692 | 21395 | 23233 |
| 25% | 38991.5 | 39244.5 | 31564 | 31318.5 | 20837.5 | 20747 | 19657.5 | 21164.5 |
| <i>Minimum</i> | 19784 | 24826 | 13555 | 9601 | 13027 | 13142 | 12666 | 13586 |

Table 1: Sample Dataset — Template Size Distribution

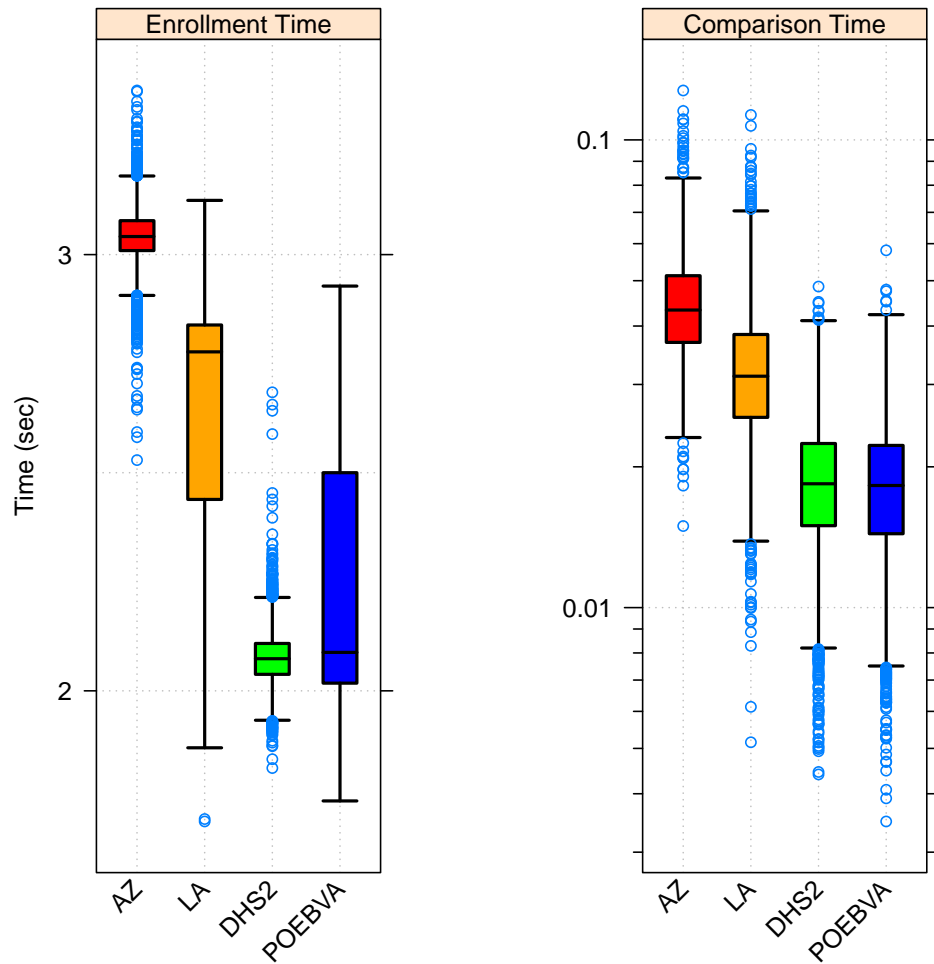


Figure 2: 1K Sample Evaluation – Enrollment and Comparison Timing

| | AZ | LA | DHS2 | POEBVA |
|----------------|-------|-------|-------|--------|
| <i>Maximum</i> | 3.376 | 3.124 | 2.684 | 2.928 |
| <i>75%</i> | 3.078 | 2.839 | 2.109 | 2.500 |
| <i>Median</i> | 3.041 | 2.777 | 2.074 | 2.088 |
| <i>25%</i> | 3.009 | 2.439 | 2.038 | 2.018 |
| <i>Minimum</i> | 2.529 | 1.701 | 1.823 | 1.748 |

Table 2: Enrollment Times (sec)

| | AZ | LA | DHS2 | POEBVA |
|----------------|-------|-------|-------|--------|
| <i>Maximum</i> | 0.128 | 0.113 | 0.049 | 0.058 |
| <i>75%</i> | 0.051 | 0.038 | 0.022 | 0.022 |
| <i>Median</i> | 0.043 | 0.031 | 0.018 | 0.018 |
| <i>25%</i> | 0.037 | 0.026 | 0.015 | 0.014 |
| <i>Minimum</i> | 0.015 | 0.005 | 0.004 | 0.003 |

Table 3: Comparison Times (sec)

2 Full Evaluation

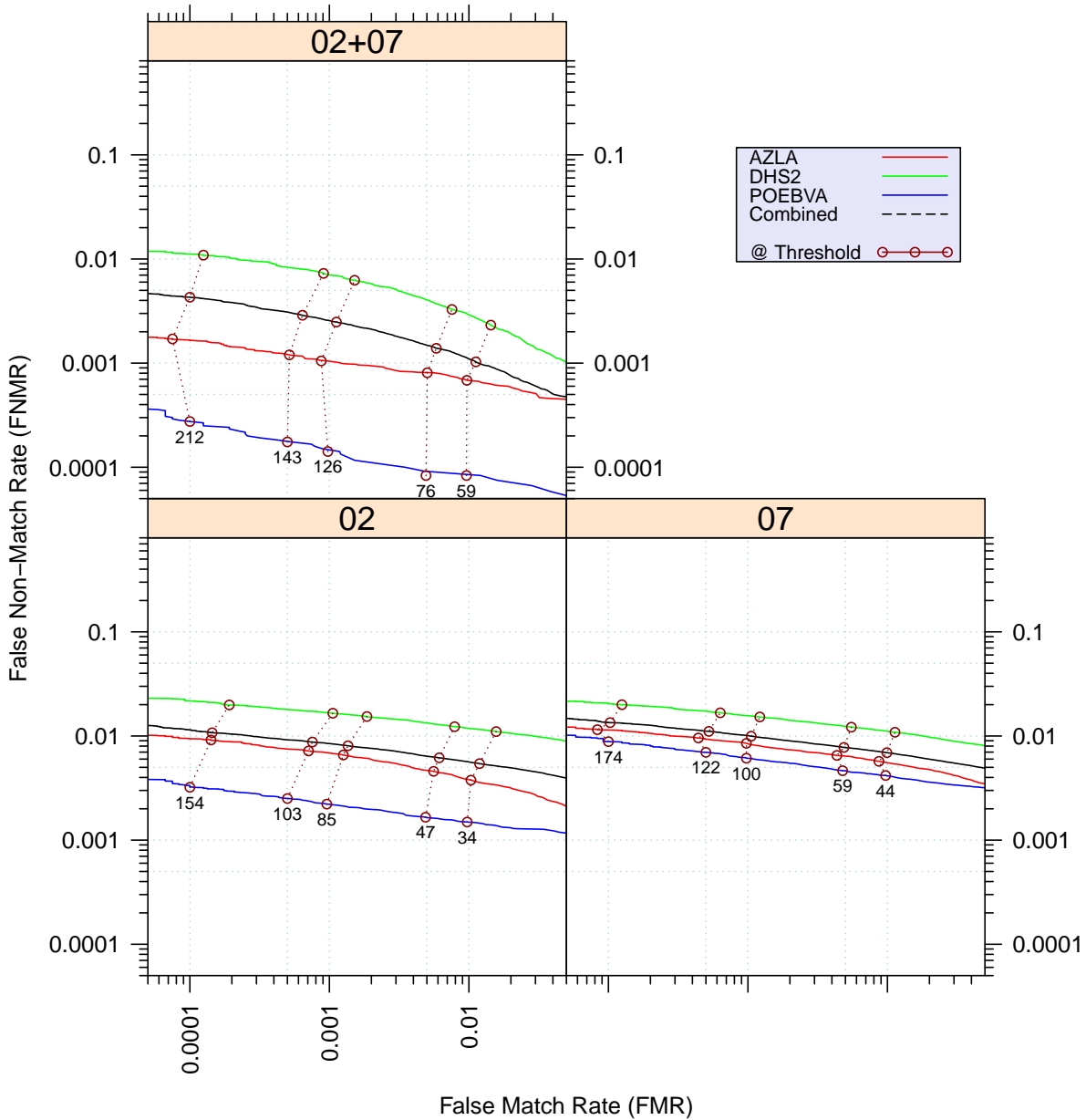


Figure 3: Full Evaluation – DET for POEBVA, DHS2, AZLA, and combined from R Index, L Index, and R/L Index

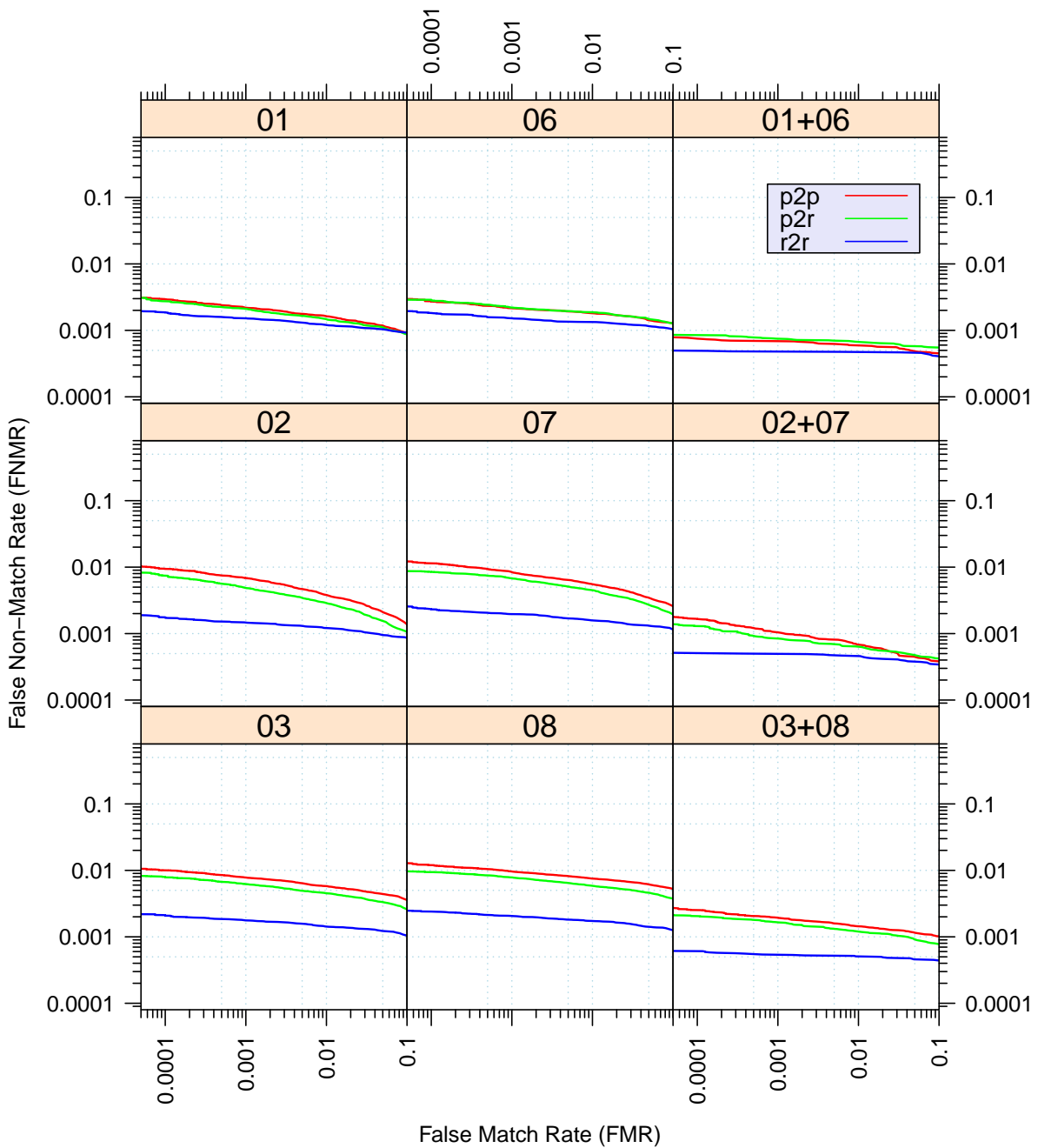


Figure 4: Full Evaluation – DET for all finger positions from AZLA

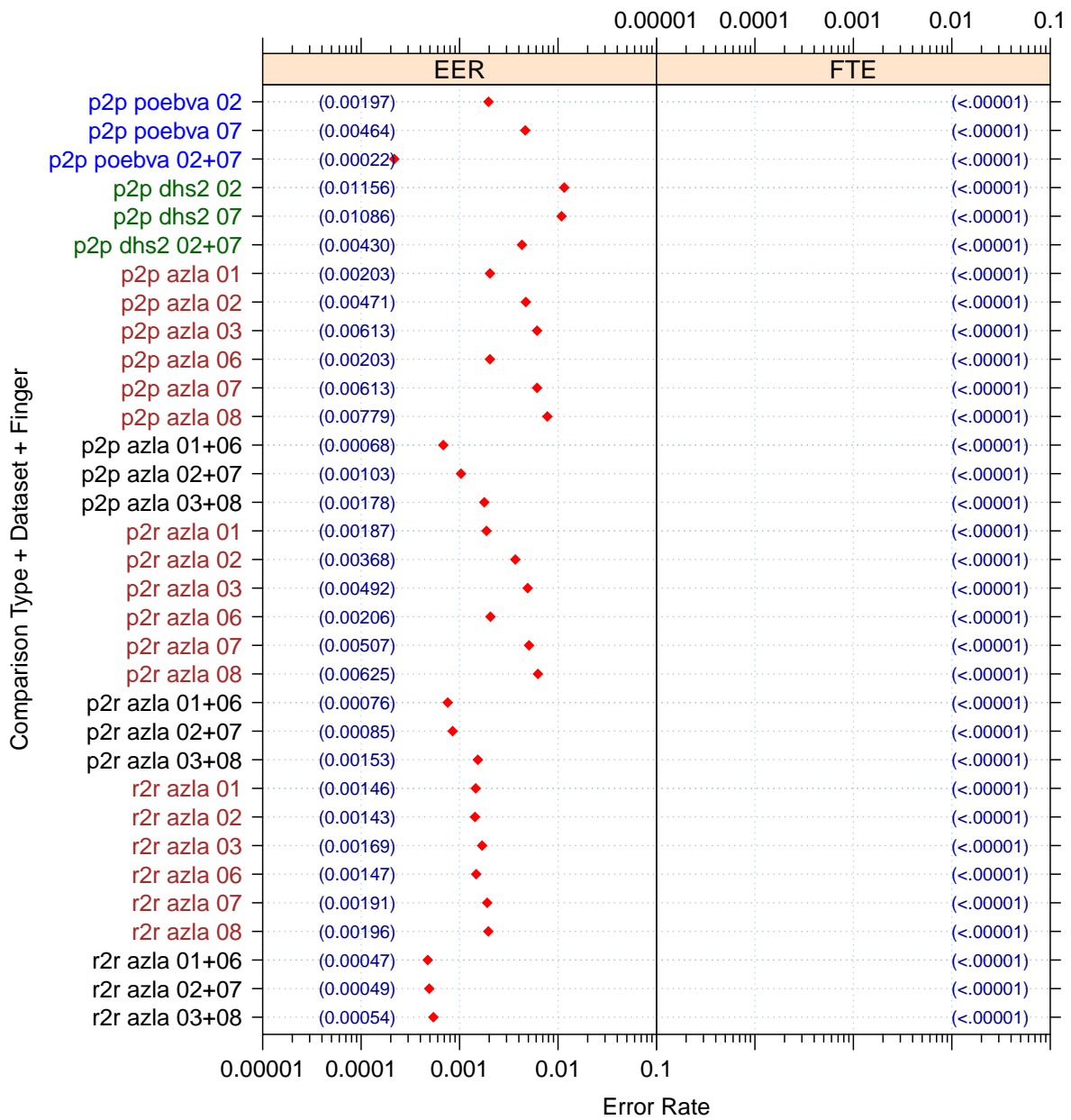


Figure 5: Full Evaluation – EERs and FTEs

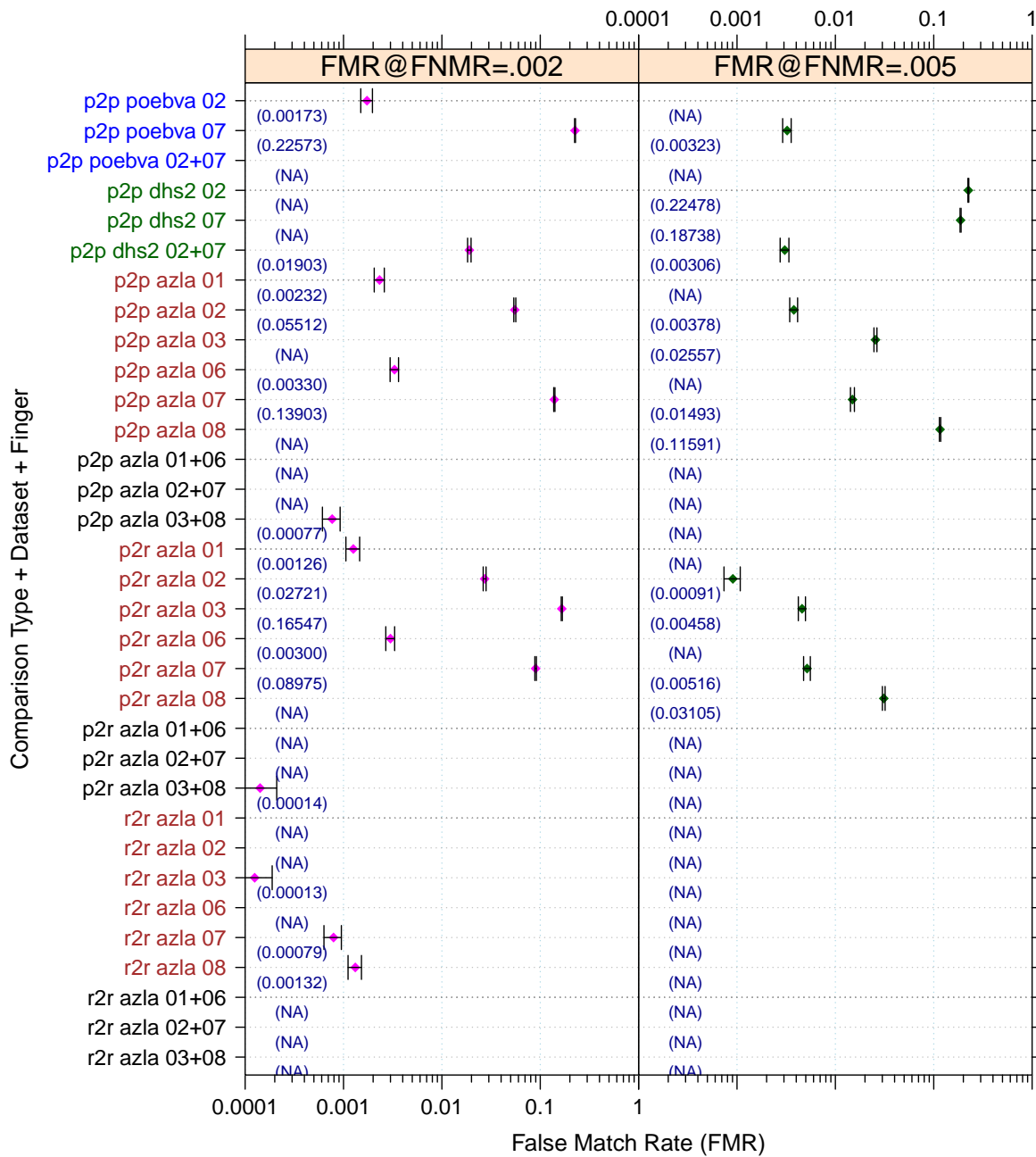


Figure 6: Full Evaluation – FMR@FNMR = (0.002, 0.005) and 95% Confidence Intervals

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

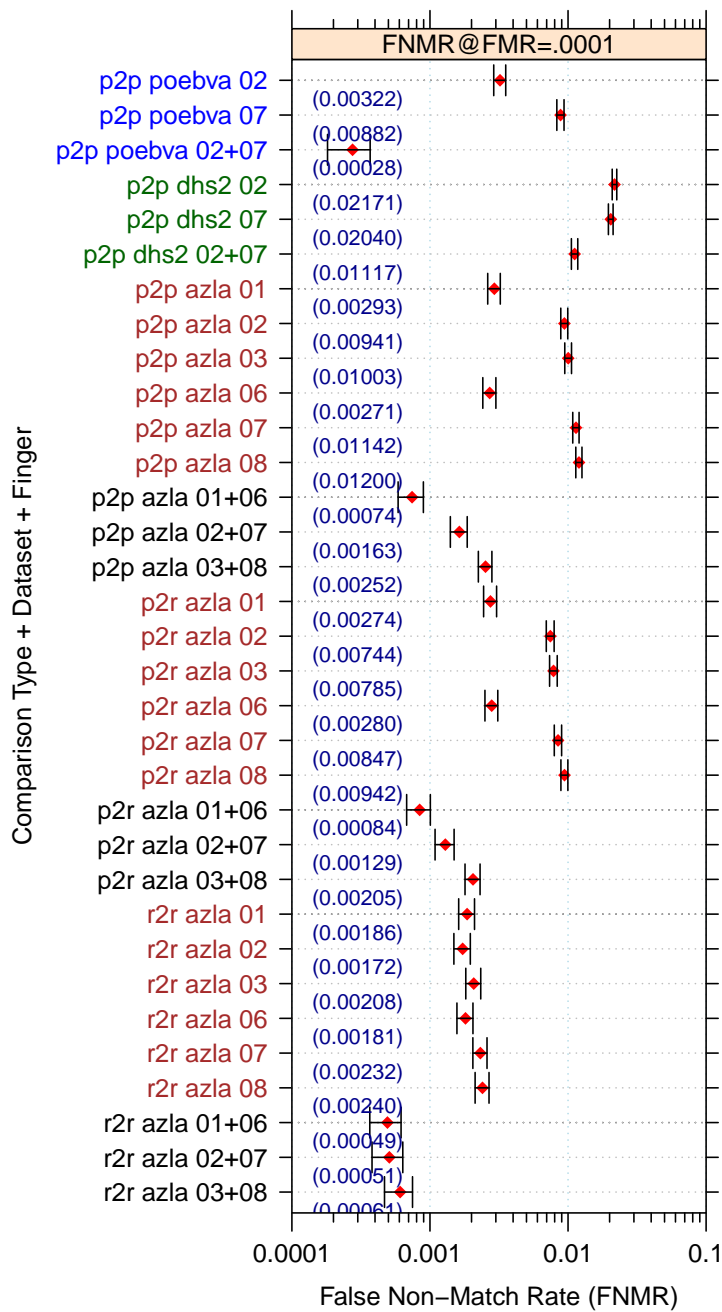


Figure 7: Full Evaluation – FNMR@FMR = 0.0001 and 95% Confidence Intervals

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> | 0.0020 | 0.0000 |
| | <i>R Index</i> | 0.0047 | 0.0000 |
| | <i>R Middle</i> | 0.0061 | 0.0000 |
| | <i>L Thumb</i> | 0.0020 | 0.0000 |
| | <i>L Index</i> | 0.0061 | 0.0000 |
| | <i>L Middle</i> | 0.0078 | 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> | 0.0018 | 0.0000 |
| Plain to Rolled | <i>R Thumb</i> | 0.0019 | 0.0000 |
| | <i>R Index</i> | 0.0037 | 0.0000 |
| | <i>R Middle</i> | 0.0049 | 0.0000 |
| | <i>L Thumb</i> | 0.0021 | 0.0000 |
| | <i>L Index</i> | 0.0051 | 0.0000 |
| | <i>L Middle</i> | 0.0063 | 0.0000 |
| | <i>R/L Thumb</i> | 0.0008 | 0.0000 |
| | <i>R/L Index</i> | 0.0008 | 0.0000 |
| | <i>R/L Middle</i> | 0.0015 | 0.0000 |
| Rolled to Rolled | <i>R Thumb</i> | 0.0015 | 0.0000 |
| | <i>R Index</i> | 0.0014 | 0.0000 |
| | <i>R Middle</i> | 0.0017 | 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> | 0.0005 | 0.0000 |

Table 4: EER and FTE — Dataset AZLA

| | | EER | FTE Rate |
|------------------|--------|------------|-----------------|
| <i>R Index</i> | 0.0116 | 0.0000 | |
| <i>L Index</i> | 0.0109 | 0.0000 | |
| <i>R/L Index</i> | 0.0043 | 0.0000 | |

Table 5: EER and FTE — Dataset DHS2

| | | EER | FTE Rate |
|------------------|--------|------------|-----------------|
| <i>R Index</i> | 0.0020 | 0.0000 | |
| <i>L Index</i> | 0.0046 | 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> | 0.0029 ±0.00031 | 0.0023 ±0.00027 | n/a |
| | <i>R Index</i> | 0.0094 ±0.00055 | 0.0551 ±0.00129 | 0.0038 ±0.00035 |
| | <i>R Middle</i> | 0.0100 ±0.00056 | n/a | 0.0256 ±0.00089 |
| | <i>L Thumb</i> | 0.0027 ±0.00029 | 0.0033 ±0.00032 | n/a |
| | <i>L Index</i> | 0.0114 ±0.00060 | 0.1390 ±0.00196 | 0.0149 ±0.00069 |
| | <i>L Middle</i> | 0.0120 ±0.00062 | n/a | 0.1159 ±0.00181 |
| | <i>R/L Thumb</i> | 0.0007 ±0.00015 | n/a | n/a |
| | <i>R/L Index</i> | 0.0016 ±0.00023 | 0.0000 ±0.00003 | n/a |
| | <i>R/L Middle</i> | 0.0025 ±0.00028 | 0.0008 ±0.00016 | n/a |
| Plain to Rolled | <i>R Thumb</i> | 0.0027 ±0.00030 | 0.0013 ±0.00020 | n/a |
| | <i>R Index</i> | 0.0074 ±0.00049 | 0.0272 ±0.00092 | 0.0009 ±0.00017 |
| | <i>R Middle</i> | 0.0078 ±0.00050 | 0.1655 ±0.00210 | 0.0046 ±0.00038 |
| | <i>L Thumb</i> | 0.0028 ±0.00030 | 0.0030 ±0.00031 | n/a |
| | <i>L Index</i> | 0.0085 ±0.00052 | 0.0897 ±0.00162 | 0.0052 ±0.00040 |
| | <i>L Middle</i> | 0.0094 ±0.00055 | n/a | 0.0311 ±0.00098 |
| | <i>R/L Thumb</i> | 0.0008 ±0.00016 | 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 | 0.0001 ±0.00007 | n/a |
| Rolled to Rolled | <i>R Thumb</i> | 0.0019 ±0.00024 | 0.0000 ±0.00004 | n/a |
| | <i>R Index</i> | 0.0017 ±0.00023 | 0.0000 ±0.00003 | n/a |
| | <i>R Middle</i> | 0.0021 ±0.00026 | 0.0001 ±0.00006 | n/a |
| | <i>L Thumb</i> | 0.0018 ±0.00024 | 0.0000 ±0.00002 | n/a |
| | <i>L Index</i> | 0.0023 ±0.00027 | 0.0008 ±0.00016 | n/a |
| | <i>L Middle</i> | 0.0024 ±0.00028 | 0.0013 ±0.00020 | 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 ±0.00014 | 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.

| | FNMR@FMR = 0.0001 | FMR@FNMR = 0.002 | FMR@FNMR = 0.005 |
|------------------|--------------------------|-------------------------|-------------------------|
| <i>R Index</i> | 0.0217 ±0.00082 | n/a | 0.2248 ±0.00236 |
| <i>L Index</i> | 0.0204 ±0.00080 | n/a | 0.1874 ±0.00221 |
| <i>R/L Index</i> | 0.0112 ±0.00060 | 0.0190 ±0.00077 | 0.0031 ±0.00031 |

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> | 0.0032 ±0.00032 | 0.0017 ±0.00023 | n/a |
| <i>L Index</i> | 0.0088 ±0.00053 | 0.2257 ±0.00236 | 0.0032 ±0.00032 |
| <i>R/L Index</i> | 0.0003 ±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

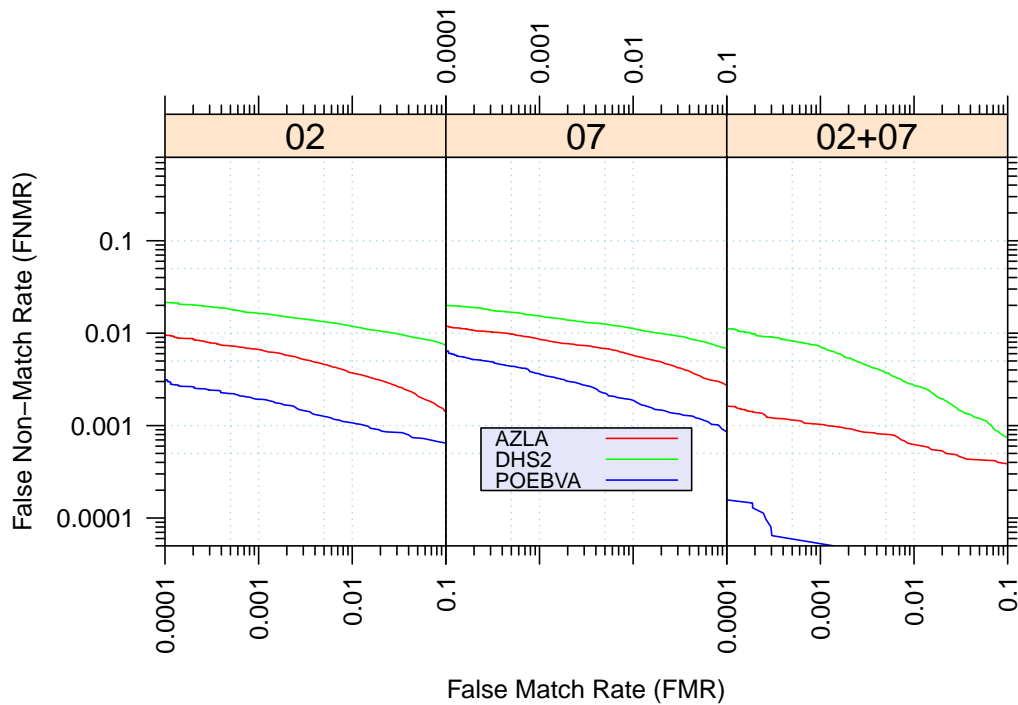


Figure 8: Original PFT Dataset – DET

| | | EER | FNMR@FMR = 0.0001 | FMR@FNMR = 0.005 |
|---------------|------------------|--------|-------------------|------------------|
| AZLA | <i>R Index</i> | 0.0046 | 0.0095 | 0.0036 |
| | <i>L Index</i> | 0.0065 | 0.0118 | 0.0173 |
| | <i>R/L Index</i> | 0.0010 | 0.0016 | n/a |
| DHS2 | <i>R Index</i> | 0.0115 | 0.0215 | 0.2395 |
| | <i>L Index</i> | 0.0110 | 0.0199 | 0.2289 |
| | <i>R/L Index</i> | 0.0040 | 0.0112 | 0.0024 |
| POEBVA | <i>R Index</i> | 0.0017 | 0.0031 | n/a |
| | <i>L Index</i> | 0.0028 | 0.0064 | 0.0003 |
| | <i>R/L Index</i> | 0.0001 | 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.