**GKR Zero-Knowledge Proof Performance Analysis Verification Time vs Matrix Size Proving Time vs Matrix Size** Trend: O(K^0.67) Verification Time 300 Proving Time 0.6 250 0.5 200 **Time (ms**) 150 **Time (ms)** 0.4 100 0.3 50 0.2 0 210 214 2<sup>10</sup> 211 2<sup>13</sup> 211 Matrix Width (K) Matrix Width (K) **Proof Size vs Matrix Size Proving Throughput vs Matrix Size** → Proof Size Proving Throughput 0.88 3.6 0.86 Throughput (K elements/sec)
08.0
08.0
08.0 3.4 **Proof Size (KB)** 3.2 3.0 0.78 2.8 0.76 2<sup>10</sup> 211 2<sup>12</sup> 2<sup>13</sup> 214 2<sup>9</sup> 2<sup>10</sup> 211 2<sup>12</sup> 2<sup>13</sup> 2<sup>14</sup> Matrix Width (K) Matrix Width (K)