Error vs. Sketching Time: Sparse Sign Embedding
20 Newsgroups: 18846 docs × 15000 words, rank-30

Legend:
- CountSketch (s=1)
- Sparse Sign (s=2)
- Sparse Sign (s=4)
- Sparse Sign (s=8)
- Sparse Sign (s=16)
- Sparse Sign (s=32)
- Sparse Sign (s=64)
- Optimal rank-30

X-axis: Sketching Time (ms)

Y-axis: Relative Error ($\|A - \hat{A}\|_F / \|A\|_F$)

$\ell = 40, 60, 80, 100, 150, 200, 300, 400, 500$