

# Performance Comparison: Vortex-Codec vs Baselines

Trade-off Analysis:  
39% better compression  
900-5600× slower speed

Ideal for:

- Archival storage
- One-time compression
- GPU-available environments
- Space > Time priority

## Evaluation Metrics on ATLAS Data

### Bits Per Byte (Lower is Better)

Gzip  
5.02 BPD

Zstd  
4.98 BPD

Vortex  
3.04 BPD  
★ 39% better ★

### Compression Factor (Higher is Better)

Gzip  
1.59×

Zstd  
1.61×

Vortex  
2.63×  
★ 64% better ★

### Throughput MB/s (Higher is Better)

Gzip  
61.2 MB/s

Zstd  
364.5 MB/s

Vortex  
0.065 MB/s  
(Trade-off)