The Performance Challenge

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■ DKRZ file systems offer about 700 GiB/s throughput
  ▶ However, I/O operations are typically inefficient: Achieving 10% of peak is good
■ Influences on I/O performance
  ▶ Application's access pattern and usage of storage interfaces
  ▶ Network congestion
  ▶ Slow storage media (tape, HDD, SSD)
  ▶ Concurrent activity – shared nature of I/O
  ▶ Tunable optimizations deal with characteristics of storage media
  ▶ These factors lead to complex interactions and non-linear behavior