REPRODUCIBILITY IS IMPORTANT FOR VERIFICATION AND VALIDATION, BUT HINDERS PERFORMANCE.

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WHY REPRODUCIBILITY?

• Helps with:
  • Verifying and validating code
  • When debugging code having ways to reproduce results increases productivity
• Each application has its own reproducibility needs and error bars
Performance and reproducibility are in tension with each other. This is both answer reproducibility and performance reproducibility.

Things limiting reproducibility include, but are not limited to:
- Numerical answers
  - Atomics
  - FMA
- Performance
  - Varying clock frequencies
  - Network contention/job placement
WHAT CAN FACILITIES DO?

● Educate users
  ○ Explain what is needed to get reproducibility when its important
  ○ Describe the tradeoffs that occur when reproducibility is required
    ○ e.g. you can’t use SHARP and be reproducible unless you get the same node set every time