High Performance Computing: Towards Better Performance Predictions and Experiments
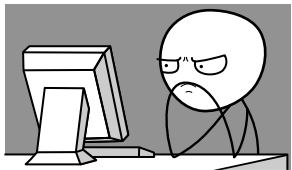
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2 June 2021, PhD defense

UGA Université Grenoble Alpes
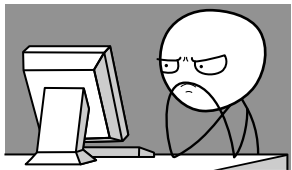
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Inría

[...] scientific computing, supercomputers, Moore's law [...]

Typical Performance Evaluation Questions (Given my application and a supercomputer)
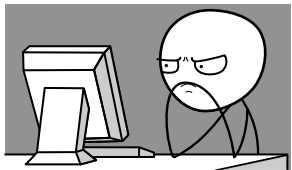

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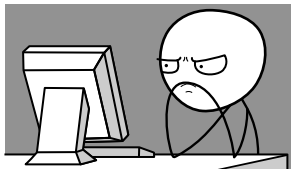 - Problem in the app or the platform?

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Holy Grail: Predictive Simulation on a "Laptop"

Capture the whole application and platform complexity

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Emulation: how?

- Computations run for real on a laptop
- Communications are faked, good fluid network models
- Performance model for the target platform