



A Compiler View of Reproducibility

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Is Reproducibility Important?

and why...

- What did you do before IEEE Floating Point?

What should compilers do?

or not do...

- Optimize

When would you require it?

- How much performance are you willing to give up?
- When would you use it?
- Is partial reproducibility useful?
- Is recompiling acceptable?
- What about exceptions?

WE OFFER 3 KINDS OF ANSWERS

GOOD – CHEAP – FAST

BUT YOU CAN ONLY PICK TWO

GOOD & CHEAP WON'T BE FAST

FAST & GOOD WON'T BE CHEAP

CHEAP & FAST WON'T BE GOOD

PGI

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What can a compiler do?



What can you get a compiler to do?

- Emulate parallel code sequentially?
- Better accumulations?
- Adversary scheduling?
- Auto-compare?