

HUBzero Platform Features

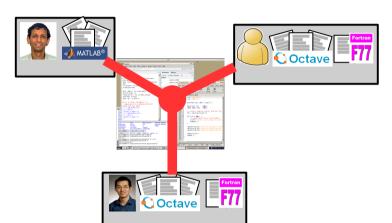
Demo of Capabilities for the TRADES Program Oct. 12, 2016

Derrick Kearney hubzero.org



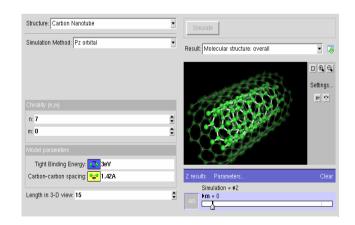
The HUBzero Platform

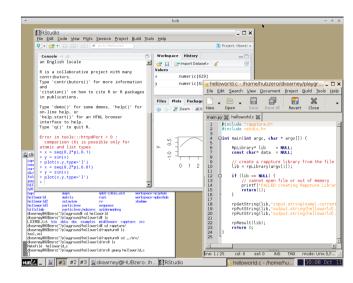




Perform Research

Collaborate
With Others

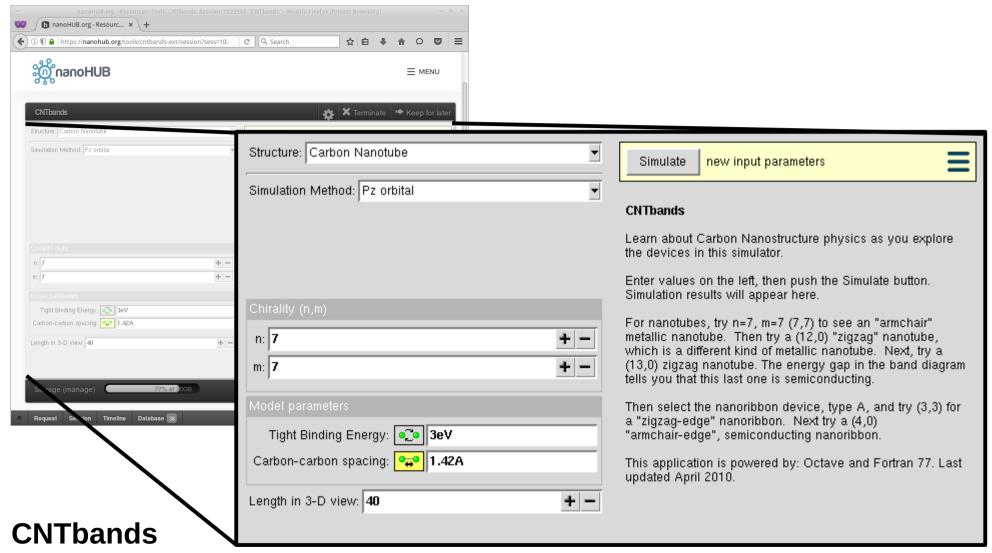




Secure, Scalable, Sharable Dev Environments

CNTbands



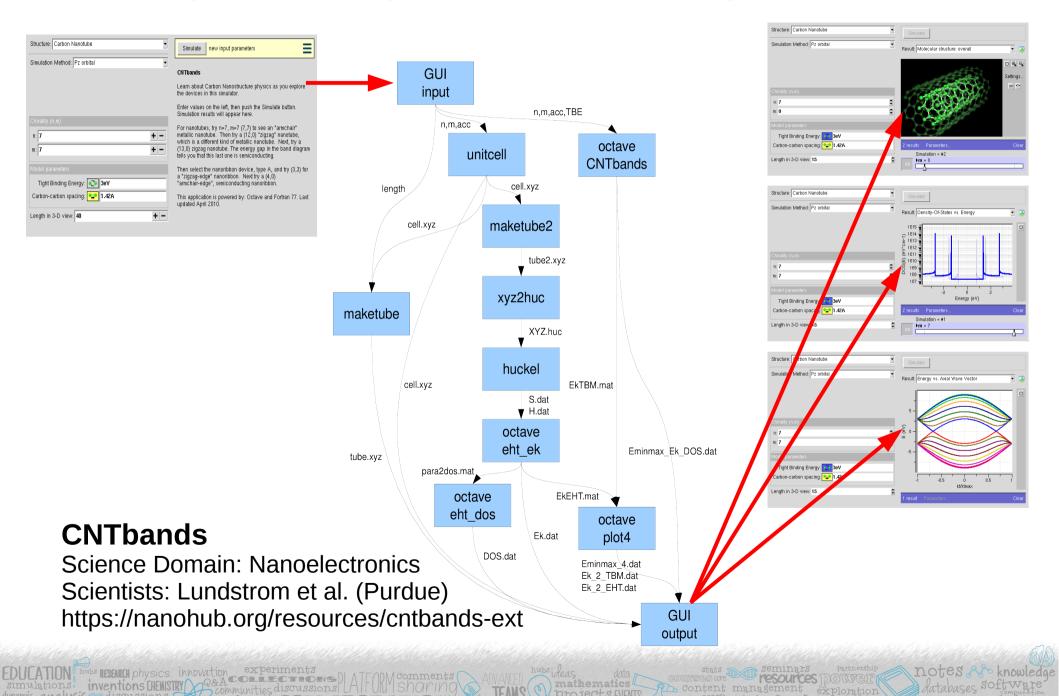


Science Domain: Nanoelectronics Scientists: Lundstrom et al. (Purdue)

https://nanohub.org/resources/cntbands-ext

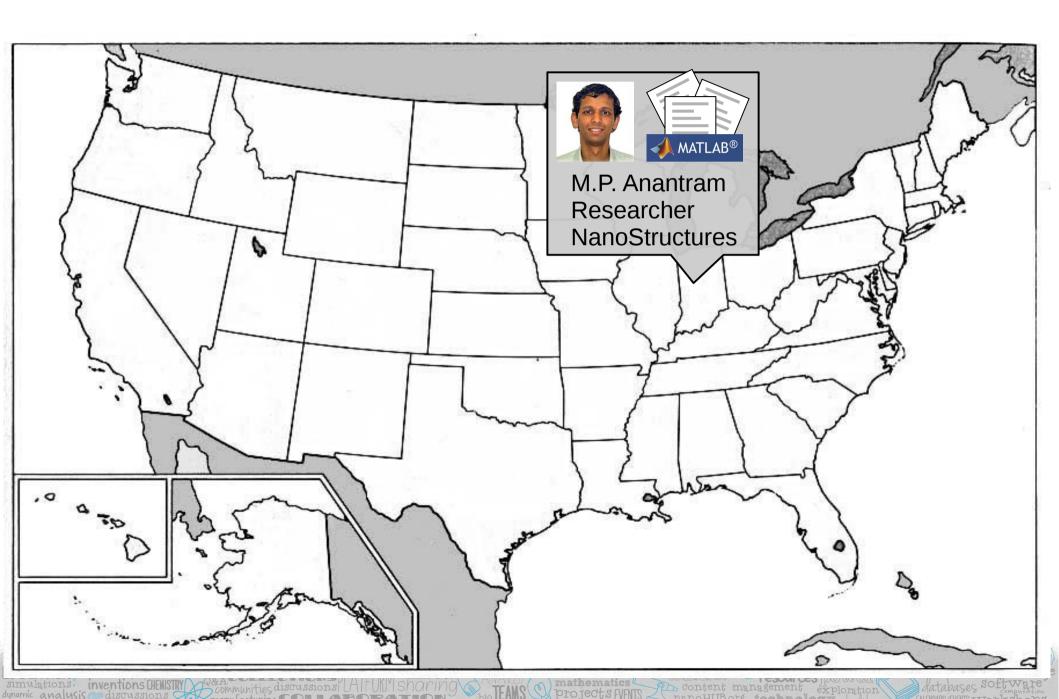
Many Pieces by Different Developers





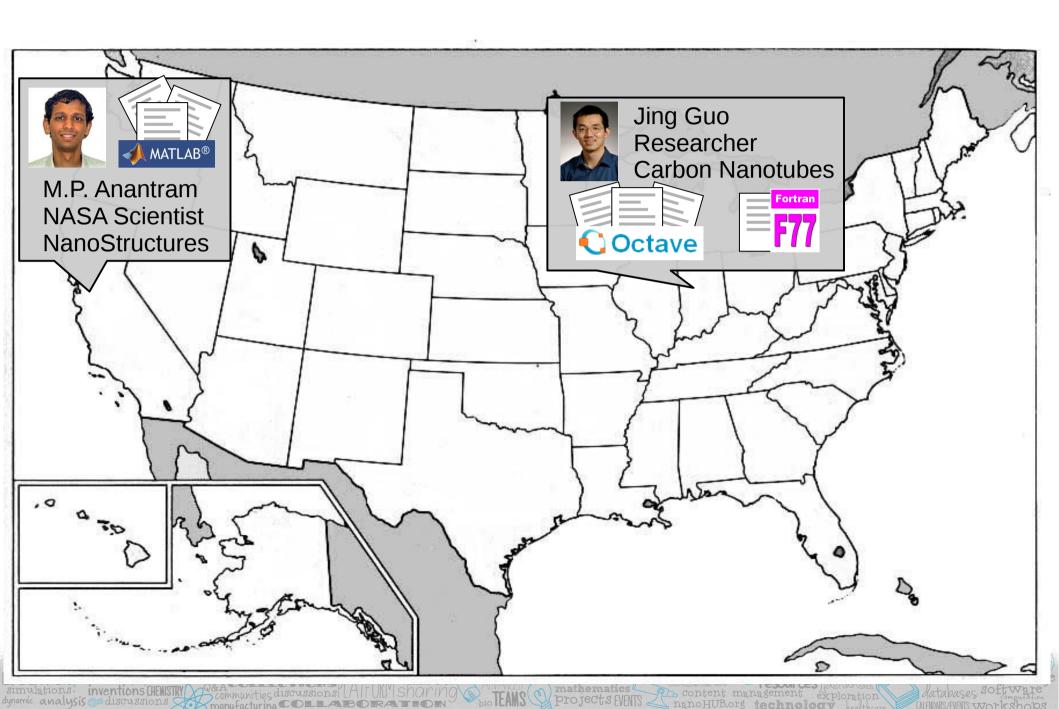
1990s – Initial Algorithms





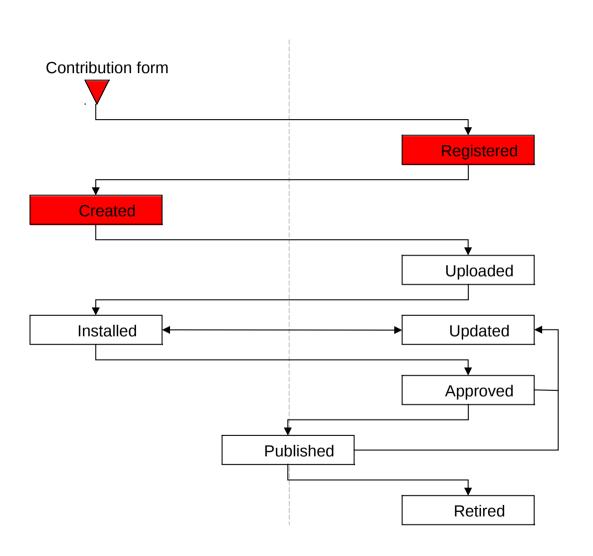
2002 – Idea for a Tool





Tool Registered





https://yourhub.org/tools

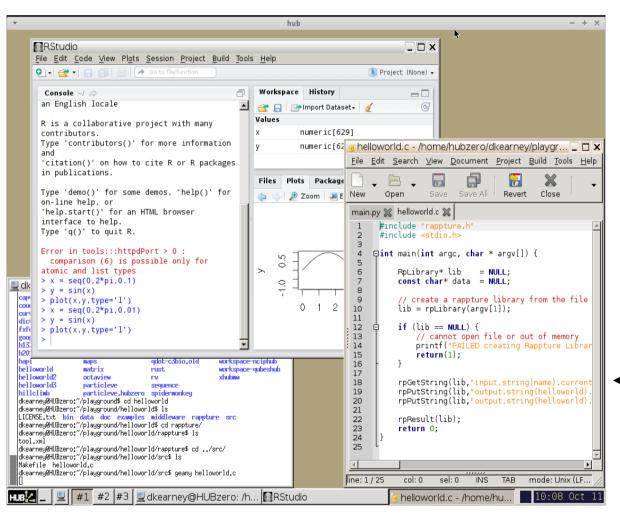


Provides:

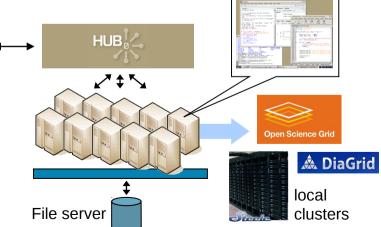
- Source code repository
- Wiki for project documentaton
- Placeholder for publishing tool
- Access to HUB Workspace

What is a Workspace?





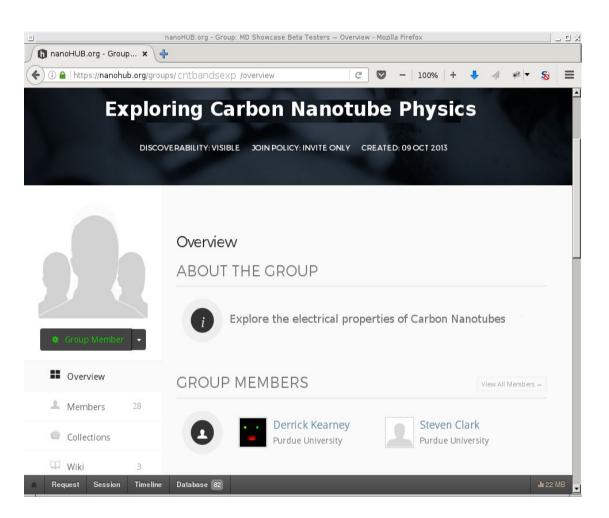
- Full-featured Desktop
- Runs in the Cloud
- For Developers & Researchers
- Accessible from any web browser
- Still running after you close browser
- File storage provided by the HUB



content management exploration

Collaborate within a Group

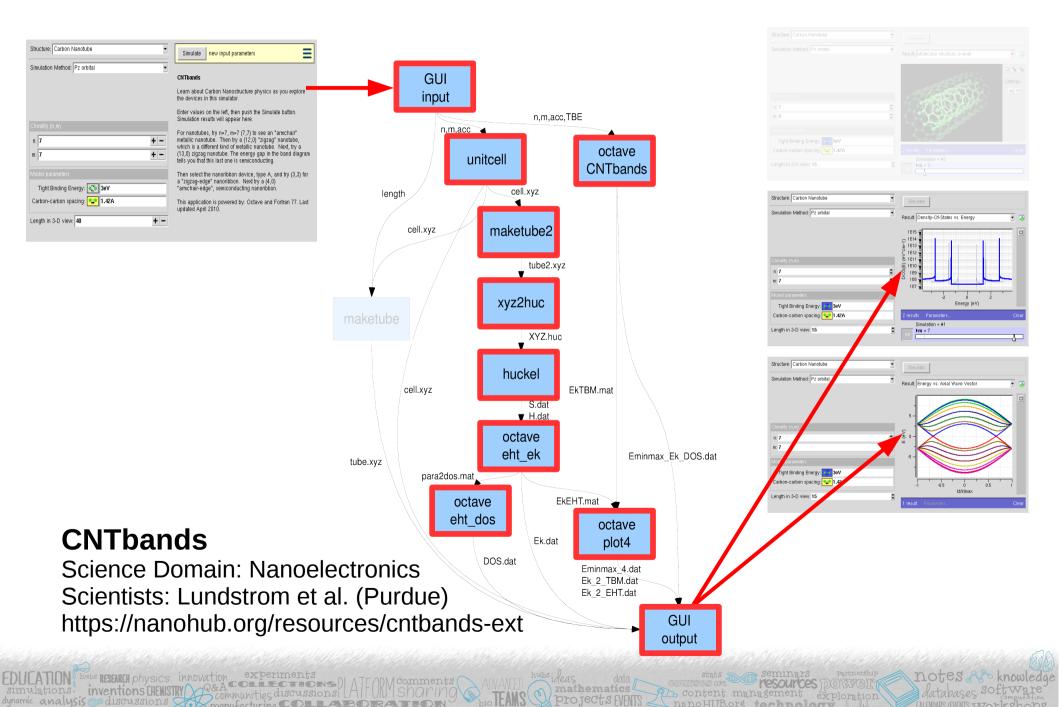




- Build a community around your research
- Share links, papers, and data
- Forums encourage discussion
- Create how-tos with wiki pages
- Keep everyone informed with Announcements

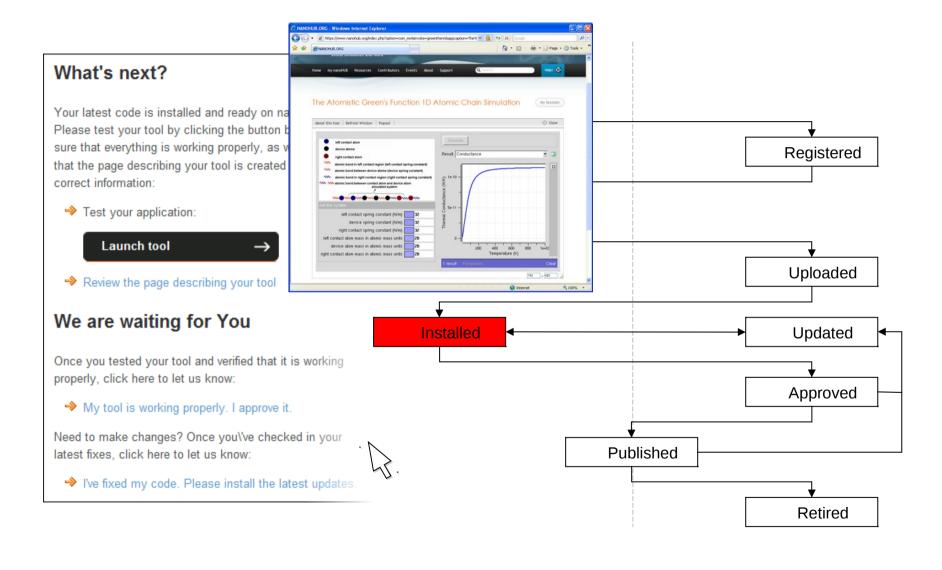
CNTbands



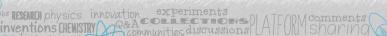


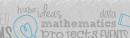
Installing Applications







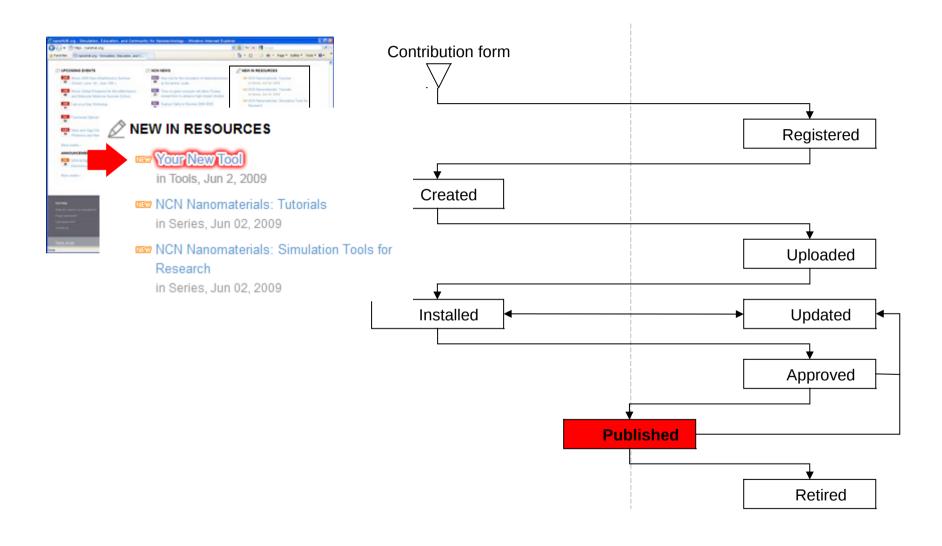






Publishing Applications





Knowing your impact



CNTbands

By Gyungseon Seol¹, Youngki Yoon¹, James K Fodor¹, Jing Guo¹, Akira Matsudaira², Diego Kienle², Gengchiau Liang², Gerhard Klimeck², Mark Lundstrom², Ahmed Ibrahim Saeed³

1. University of Florida 2. Purdue University 3. Ain Shams University

This tool simulates E-k and DOS of CNTs and graphene nanoribbons.

✓ Edit

Launch Tool

Version 2.7.2 - published on 22 Sep 2014

doi:10.4231/D3GB1XH9J cite this

Open source: license | download

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First-Time User Guide View All Supporting Documents

Easy-Expert NCN Supported ու 5611 users, detailed usage

66 16 Citation(s)

17 questions (Ask a question)

* 4 review(s) (Review this)

♀ 4 wish(es) (New Wish)

→ Share: <a>F <a>F

About

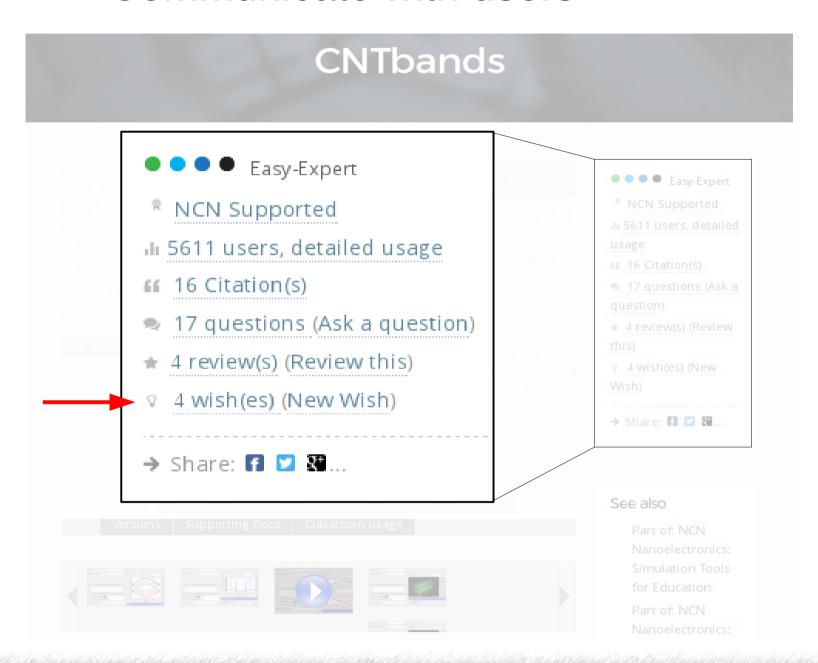
See also

Part of: NCN Nanoelectronics: Simulation Tools for Education Part of: NCN

Nanoelectronics:

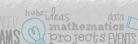
Communicate with users









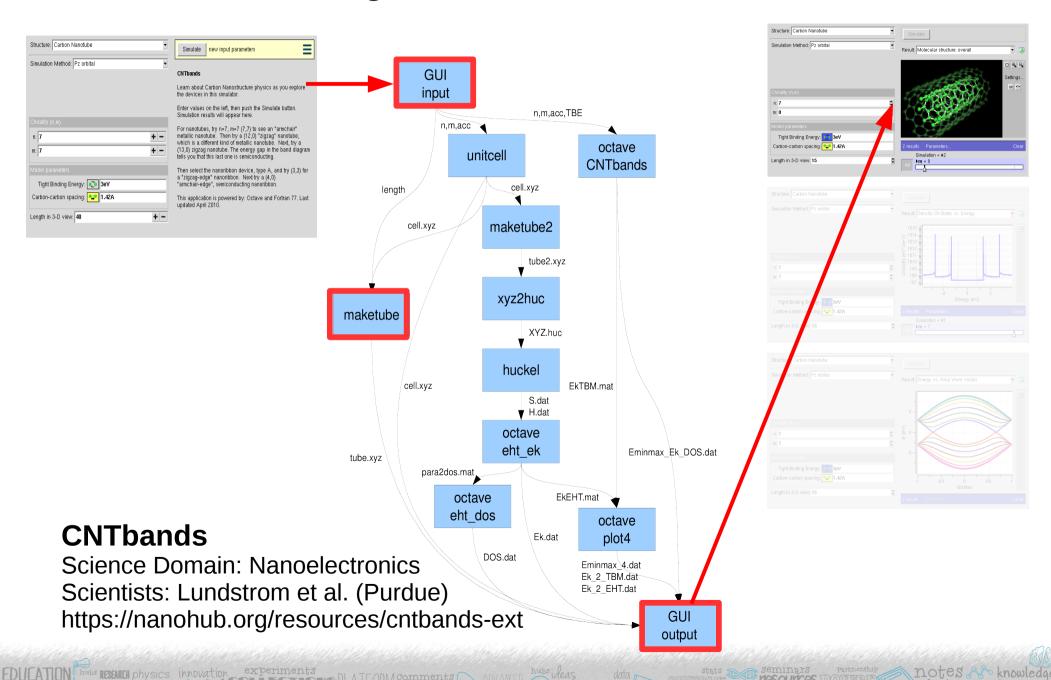


Adding New Features



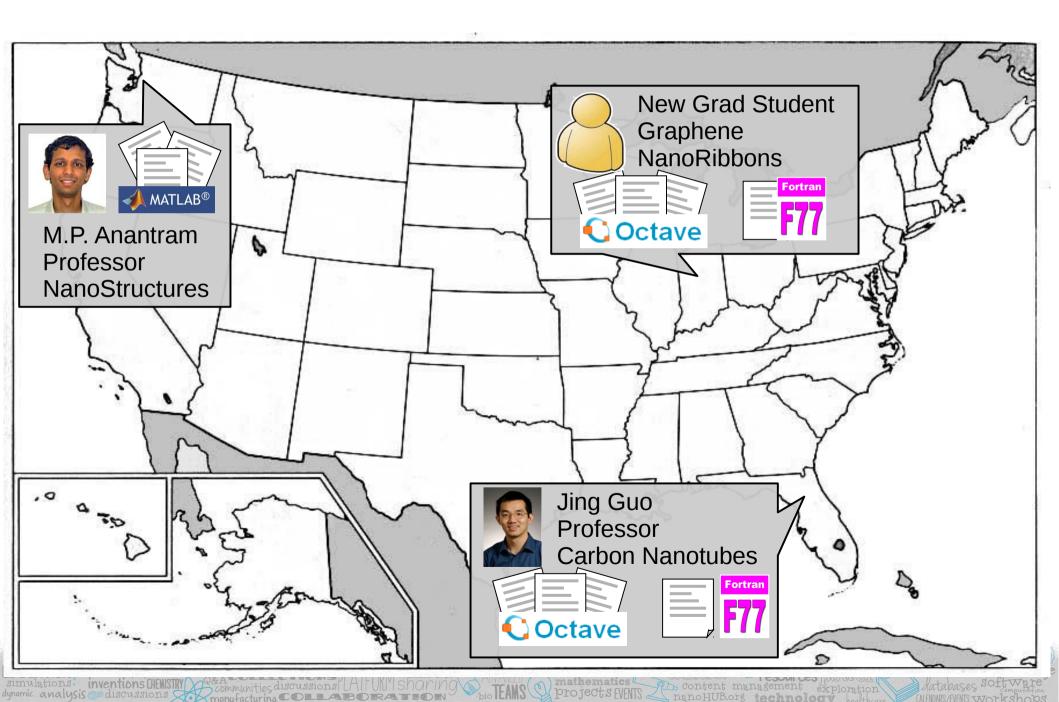
databases software

ontent management exploration



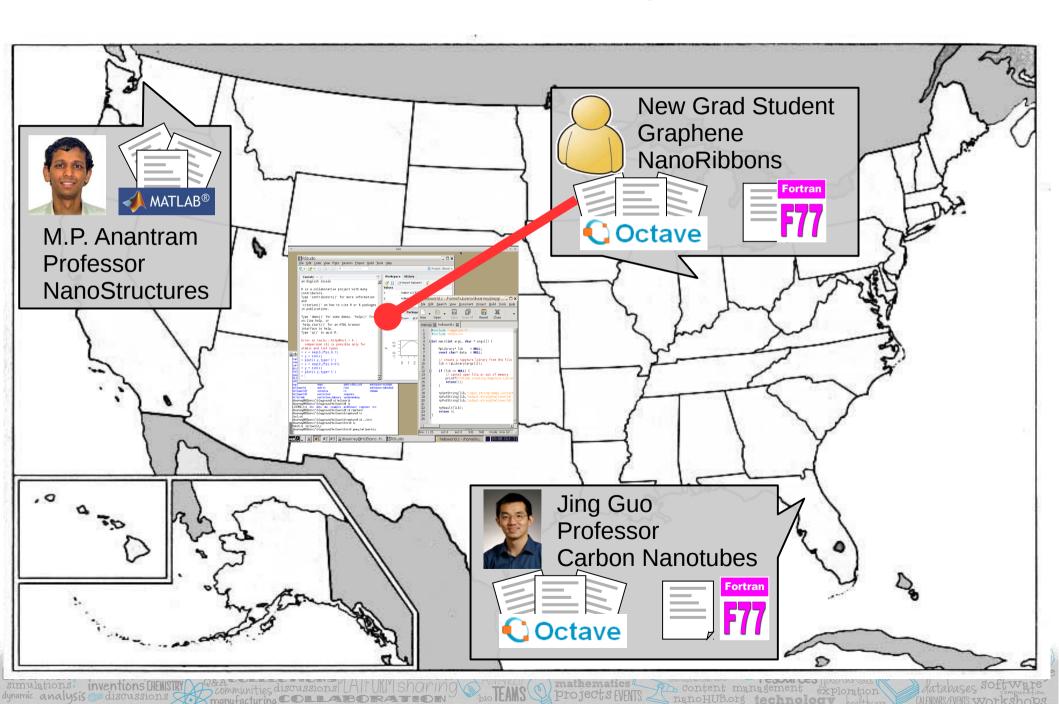
2010 – Introducing New Researchers





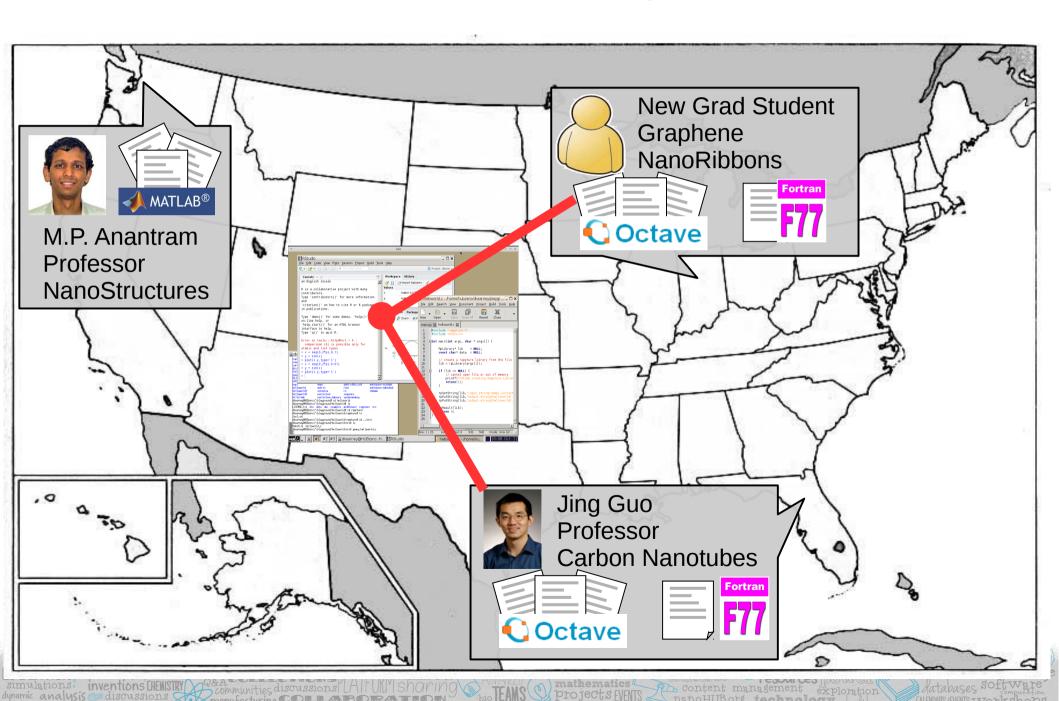
Collaborate in the Workspace





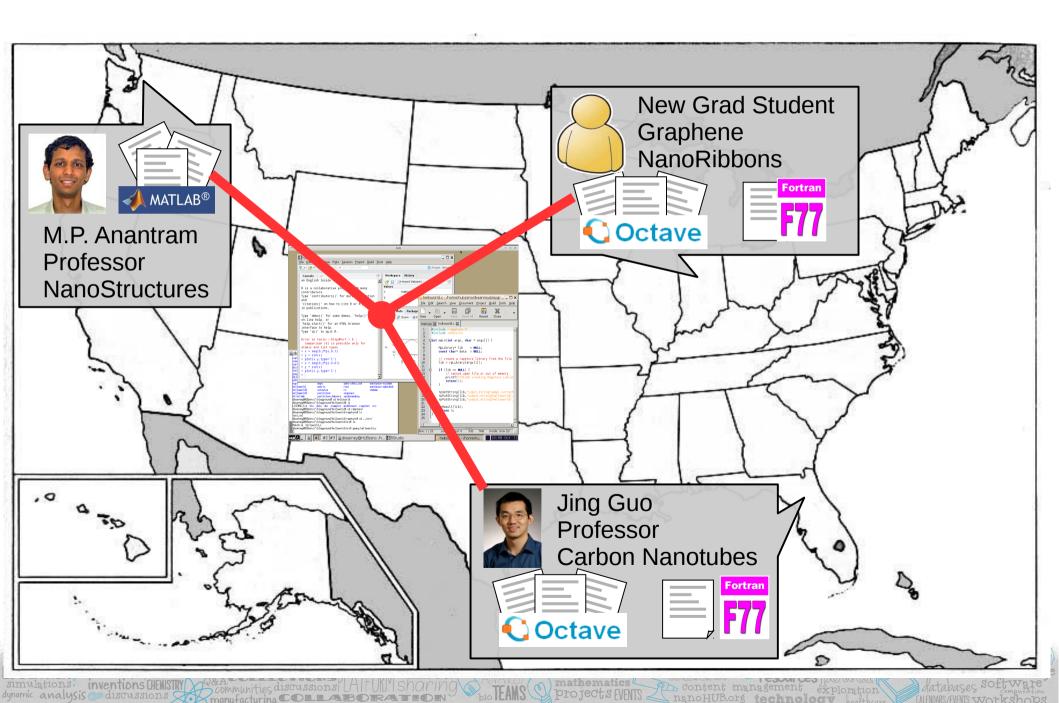
Collaborate in the Workspace





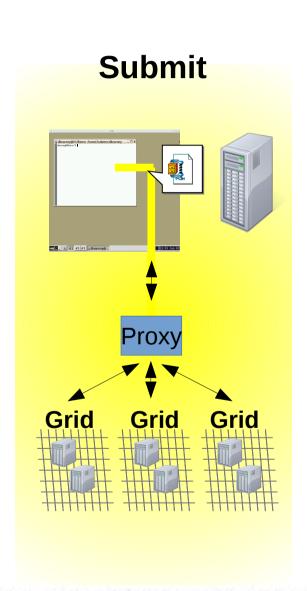
Collaborate in the Workspace



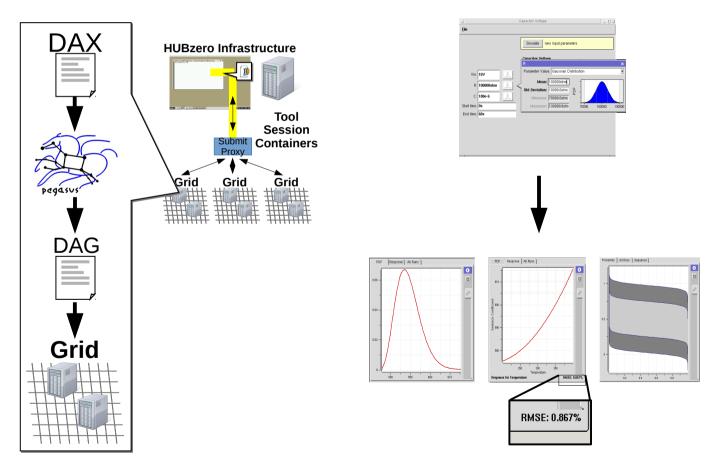


Productivity in the Workspace



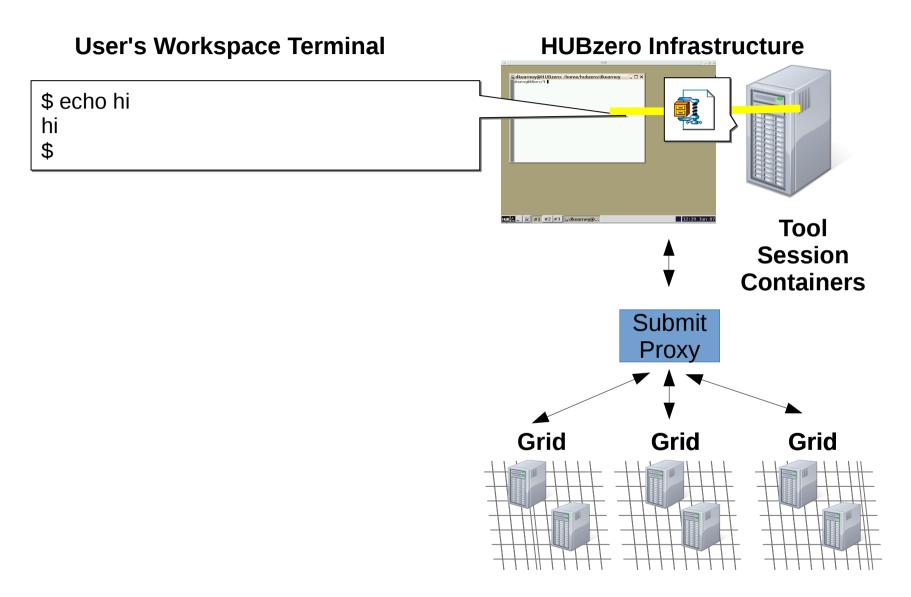


Pegasus Workflows Uncertainty Quantification



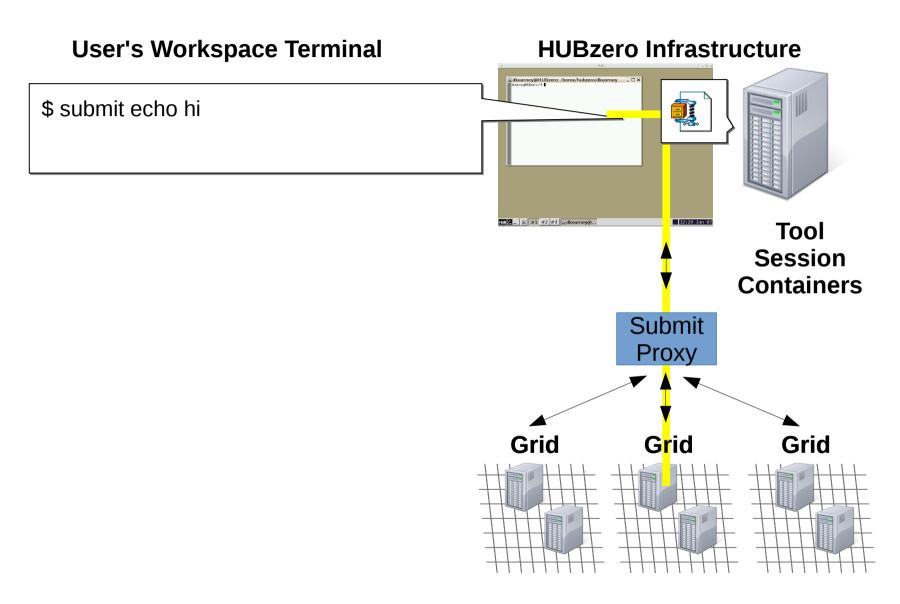
Run tools locally in Workspace





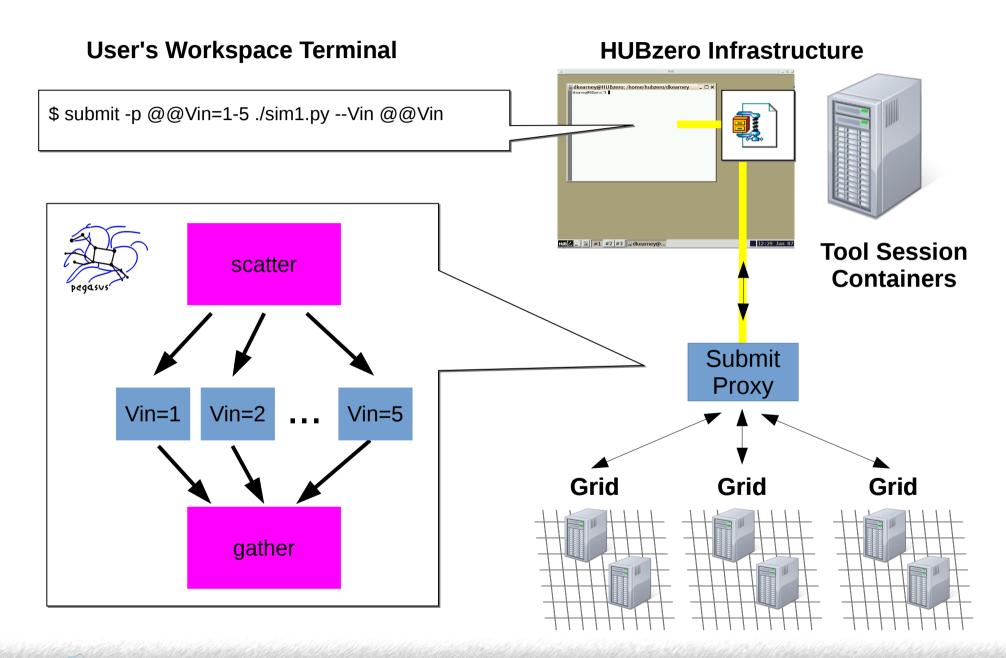
Submit Jobs to Grid





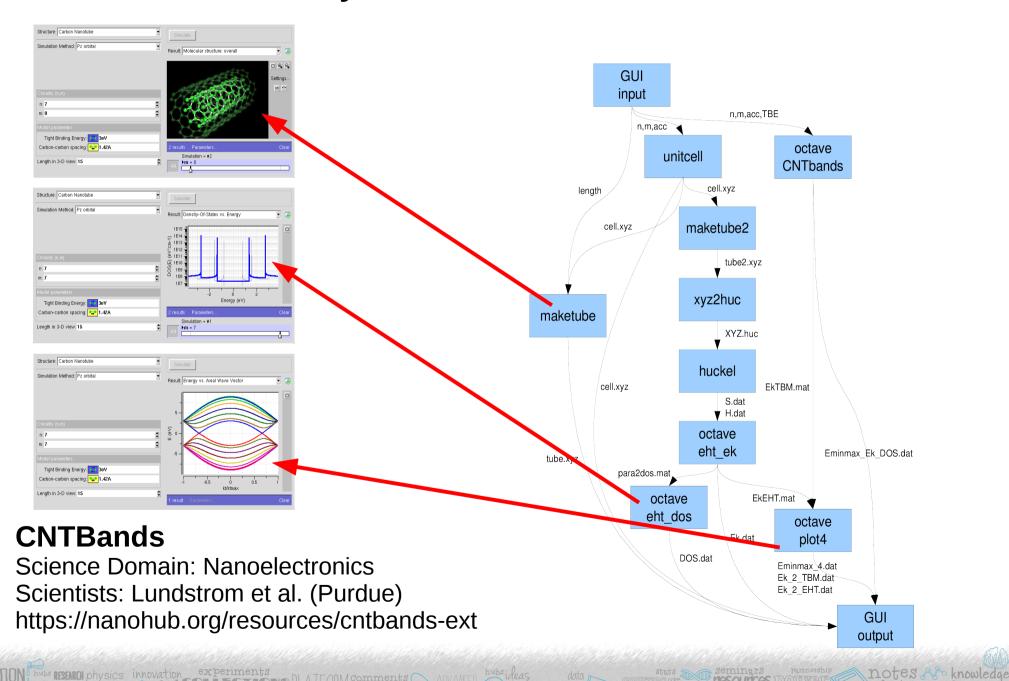
Let Submit create a workflow ...





hubzero

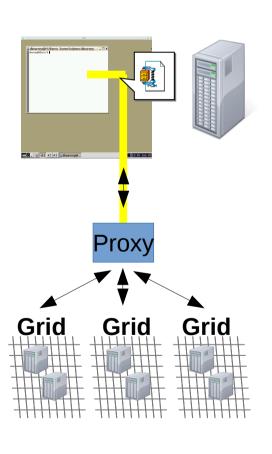
... or write your own workflow

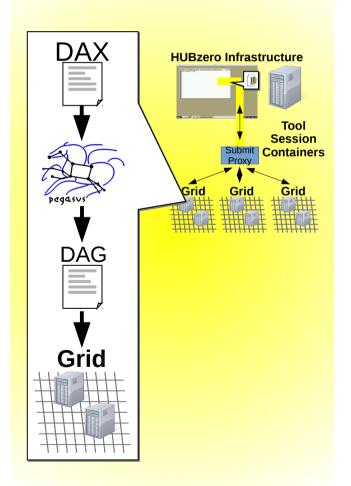


Productivity in the Workspace

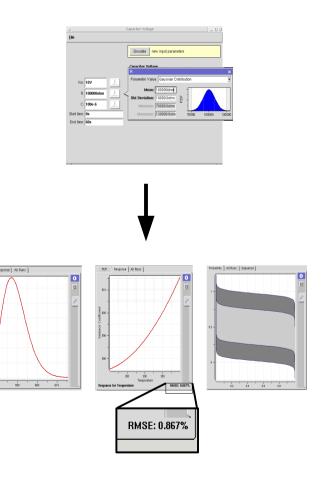


Submit





Pegasus Workflows Uncertainty Quantification



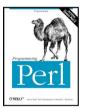
Pegasus Workflow Management

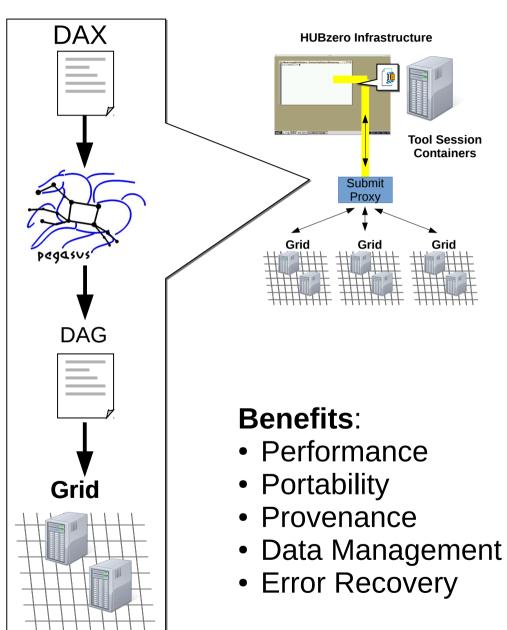


- Developed at USC
- Ewa Deelman et al.
- Website: pegasus.isi.edu
- Open Source
- Bindings for your favorite languages:







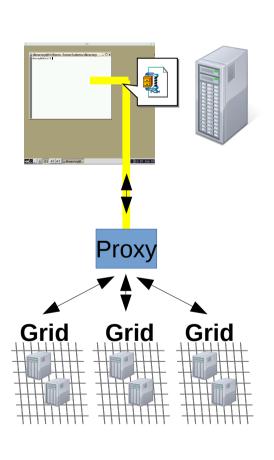


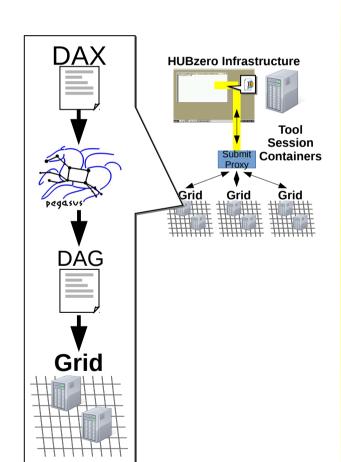
Productivity in the Workspace

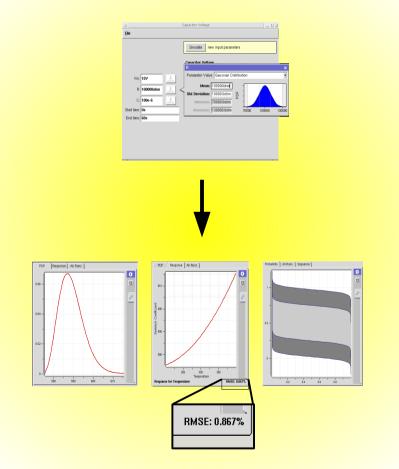


Submit

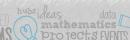
Pegasus Workflows Uncertainty Quantification





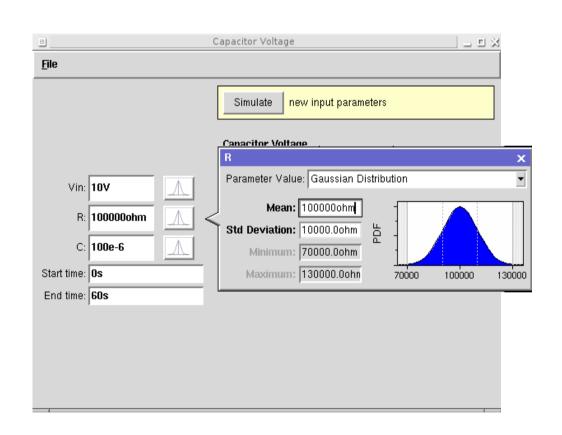


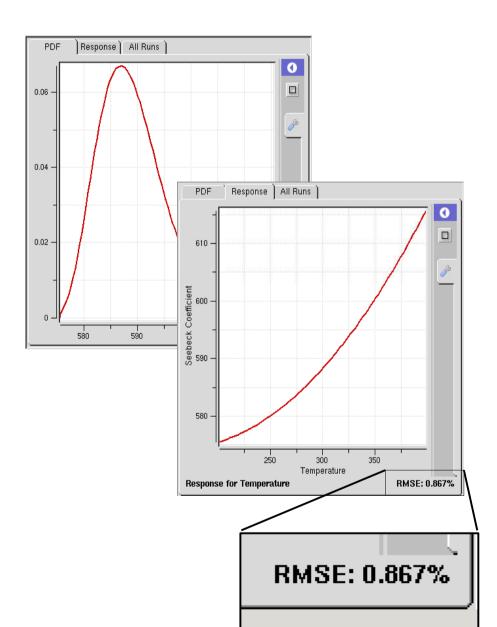




Inputs and Outputs as Distributions







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