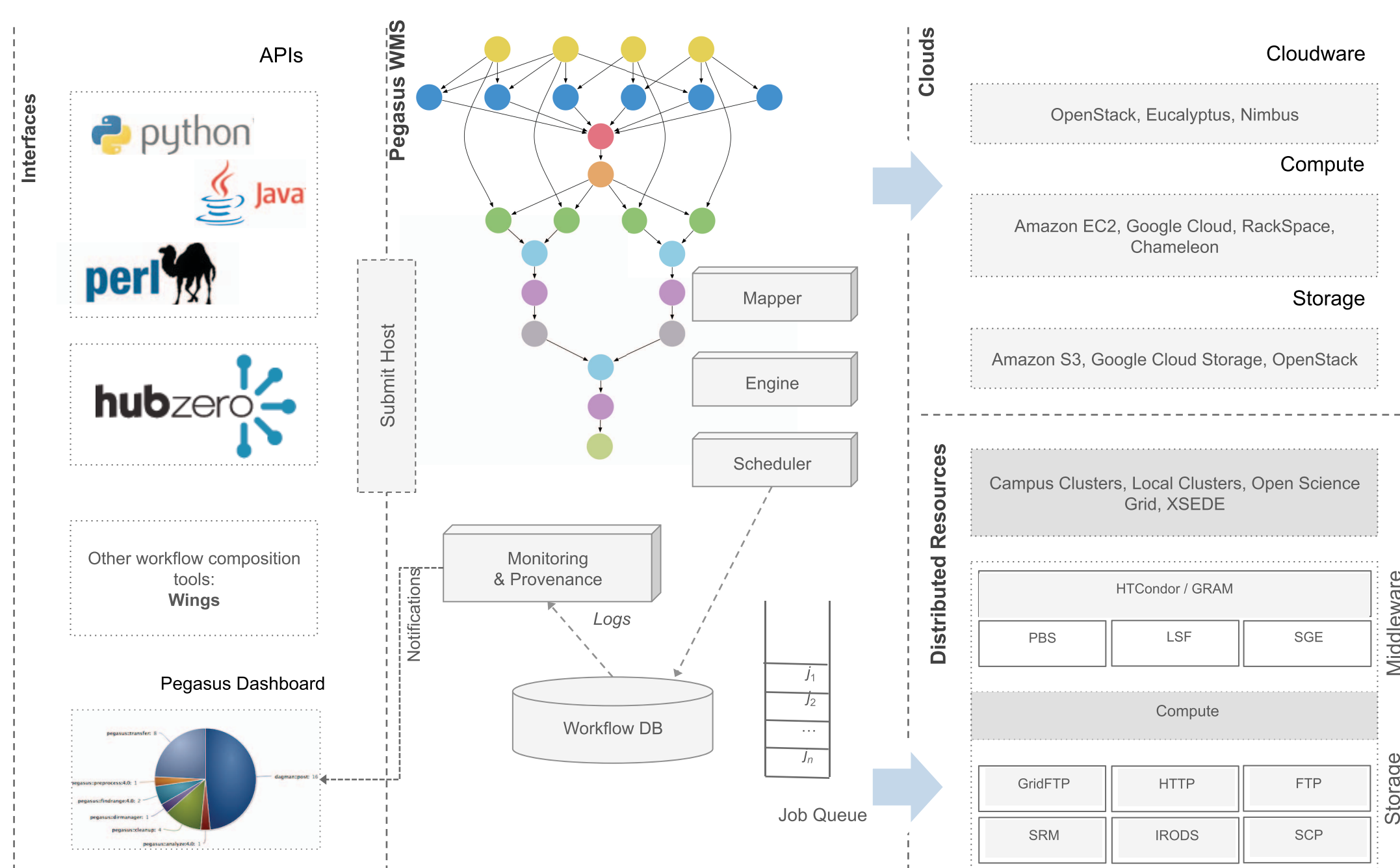
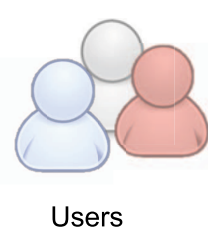




Pegasus WMS

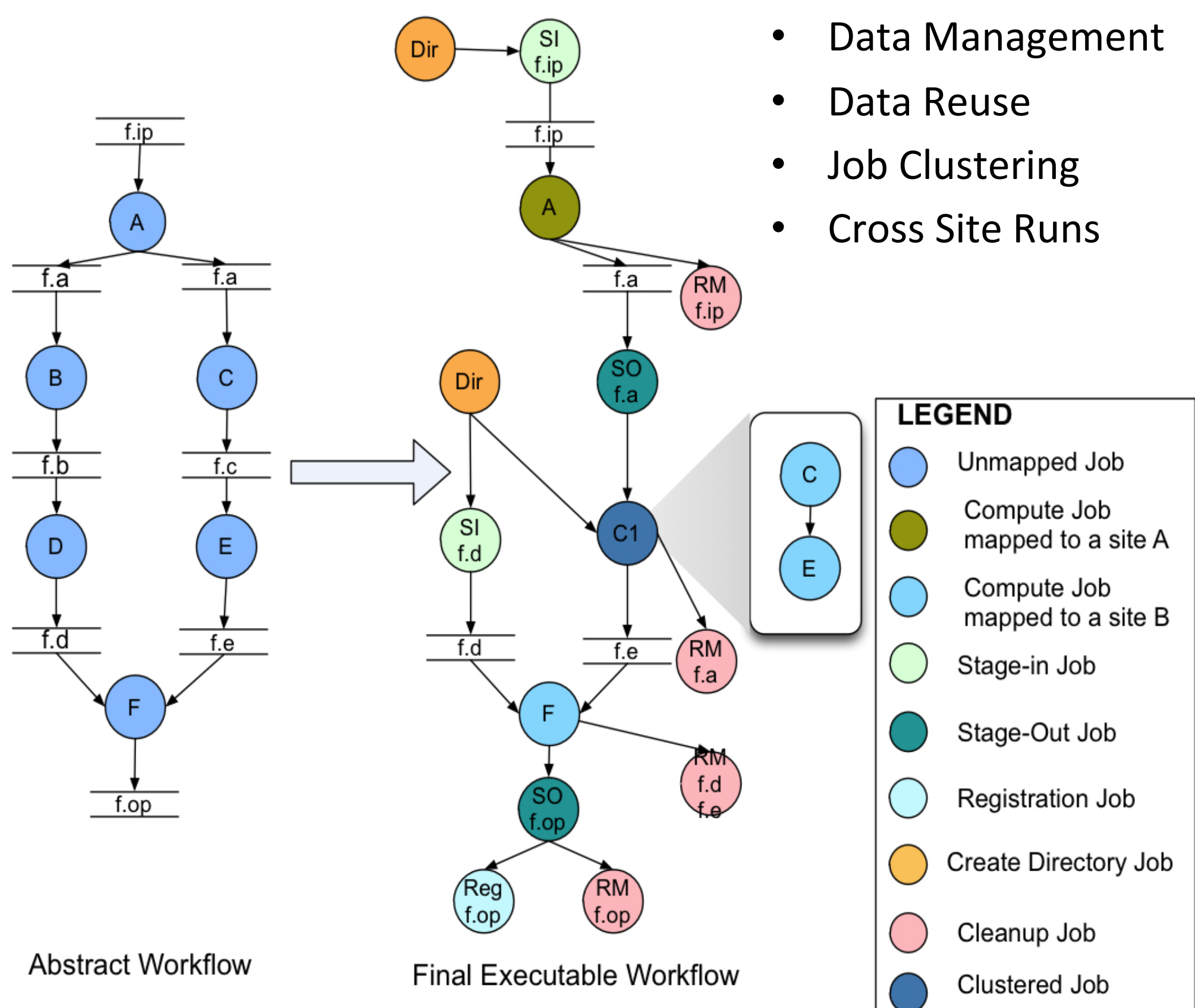
- Pegasus is a system for mapping and executing abstract application workflows over a range of execution environments.
- The same abstract workflow can, at different times, be mapped different execution environments such as XSEDE, OSG, commercial and academic clouds, campus grids, and clusters.
- Pegasus can easily scale both the size of the workflow, and the resources that the workflow is distributed over. Pegasus runs workflows ranging from just a few computational tasks up to 1 million.
- Stores static and runtime metadata associated with workflow, files and tasks. Accessible via command line tools and web based dashboard.
- Pegasus-MPI-Cluster enables fine-grained task graphs to be executed efficiently on HPC resources.



Canonical Workflow Example

Capabilities Highlighted

- Data Management
- Data Reuse
- Job Clustering
- Cross Site Runs



Software Availability

Release Schedule

- Major Release every 9 months. Minor releases every 4 months
- Continuous Integration Testing with Bamboo
- Issue Tracking via JIRA

Download Options

- Source Code publicly hosted on GitHub
- Binary packages for Linux and MAC
- YUM/APT repositories with RPM/DEB packages
- Nightly Developments builds also available

Documentation / Training Materials

- Tutorials - Virtual Machine, EC2 and Docker images
- Support - Email lists and online chat rooms
- OSG Software Carpentry
- Online User Guide

Downloads & Usage Since 2013

- Workflows - 714,092
- Tasks - 3,790,099,571
- Jobs - 526,933,668



Applications using Pegasus

Astronomy and Physics

Pegasus powered LIGO analysis workflows to detect gravitational waves.

- Periodogram workflows help detect extra solar planets.
- Galactic Plane workflow generates mosaics for astronomy surveys.

Seismology

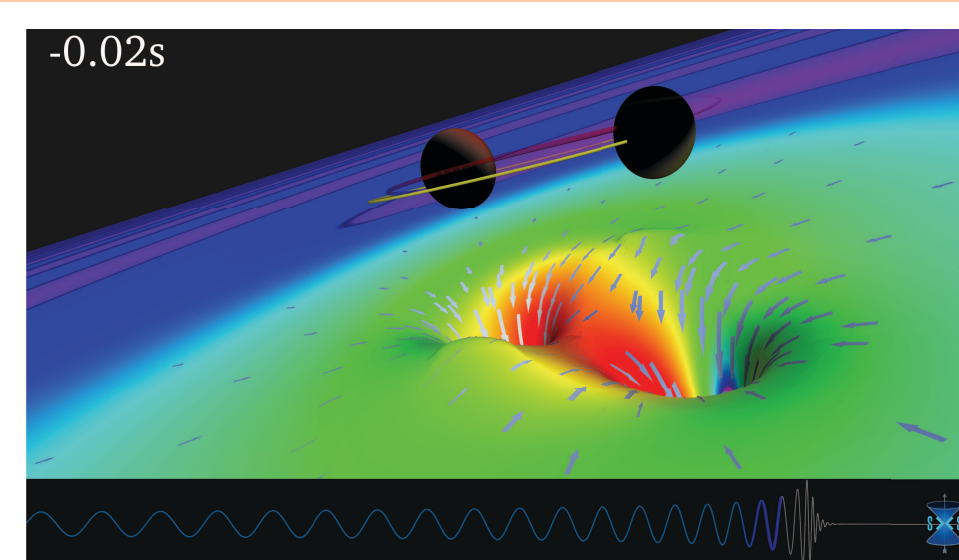
- CyberShake workflows for seismic hazard analysis of LA basin.
- Broadband workflows for accurate predictions of ground motions.

Bioinformatics

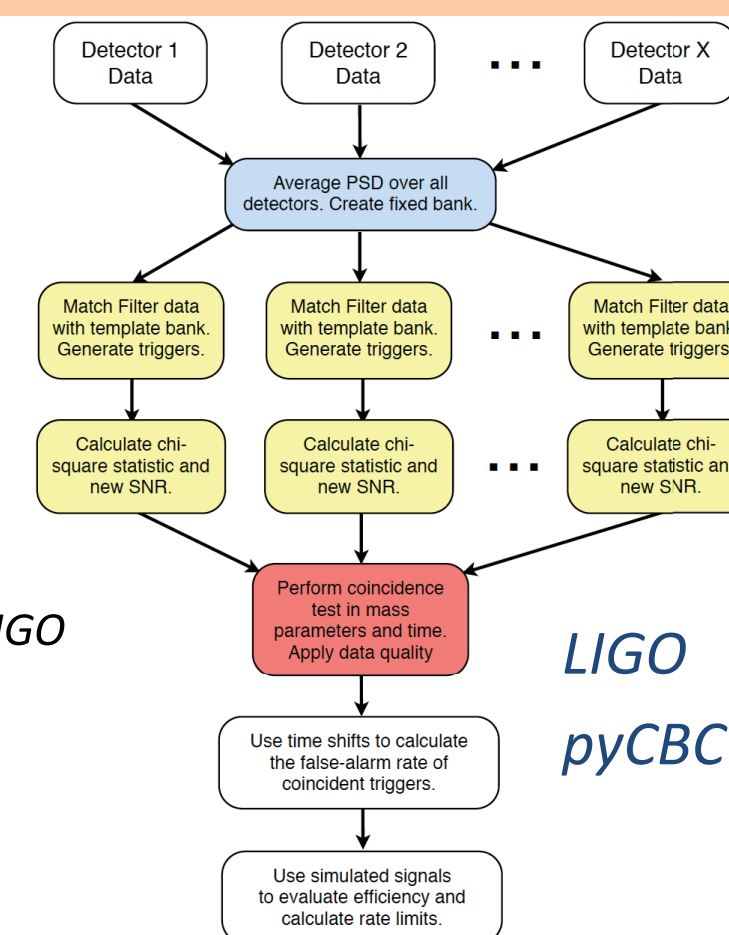
- Quality control workflows for data submissions to NRGR repository and PAGE consortium.
- Imputation workflows on PAGE data.
- Workflows for Genome and Transcriptome free analysis of RSEQ.
- Brain span workflows help study gene expression in the brain.
- RNA Sequencing workflows for generating Cancer Genome Atlas.
- SIPHT workflows to predict sRNA encoding genes in bacteria.
- Proteomics workflows for mass spectrometry based proteomics.

Others <http://pegasus.isi.edu/applications>

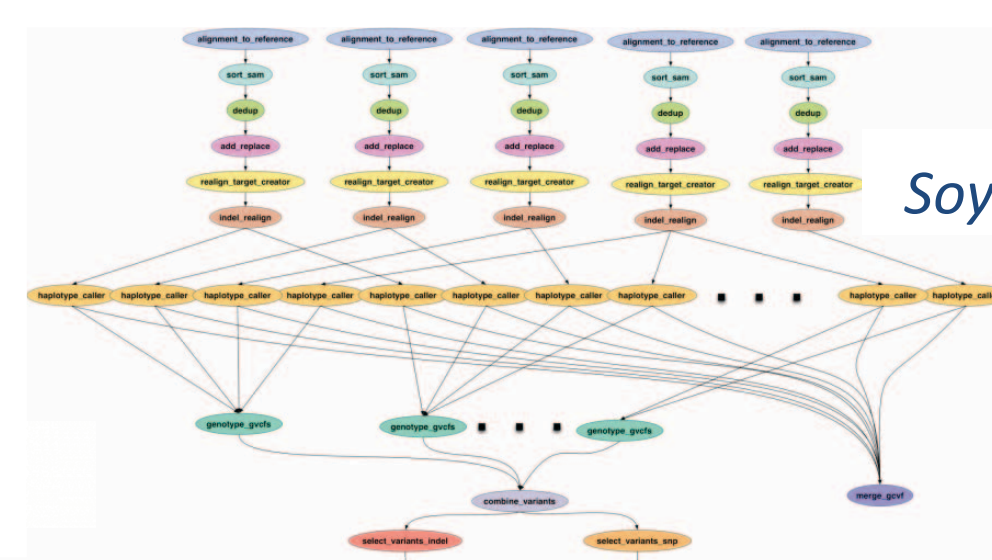
- ACME Climate Modeling Workflows study interaction between climate change and societal energy requirements.



0.2 Second before the black holes collide. Image credit: SXS/LIGO

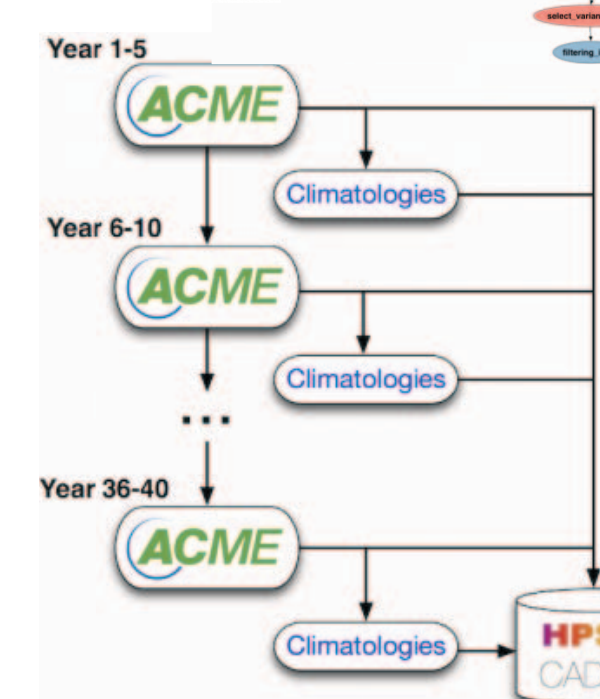


LIGO pyCBC



Spallation Neutron Source

ACME



DNA Sequencing

