GWpy (and other LIGO software)

Katerina Chatziioannou

Flatiron Institute

3rd HEL.A.S. and DAAD School, October 11th

Gravitational Wave Open Science Center

Data Releases for Observed Transients

Data Releases: Compact Object Mergers

Click icons below for data and documentation:

GW150914 | LVT151012 | GW151226 | GW170104 | GW170608 | GW170814 | GW170817

Parameter Estimation Posterior Samples

Posterior samples used for parameter esimation are available for some events:

- **O1 Binary Black Hole Mergers**: see parameter estimation samples
- **Binary Neutron Star Merger GW170817** - see results from two publications: P1800115 | P1800061

Audio files

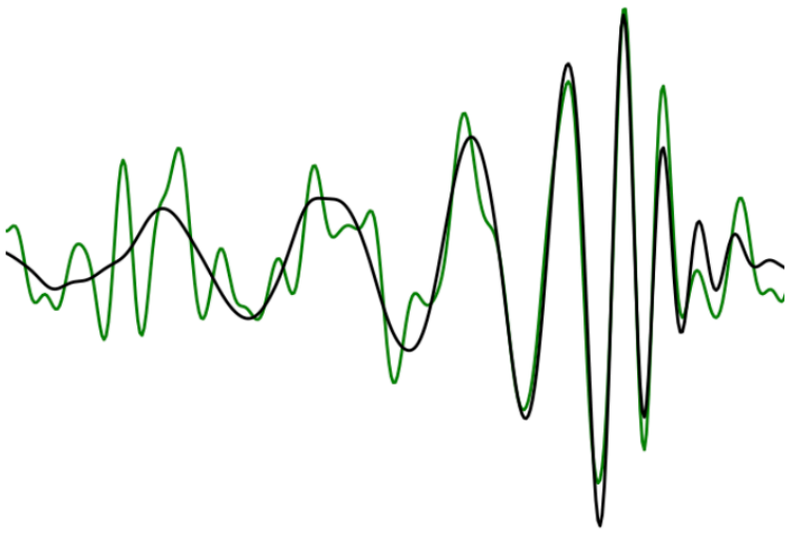
Listen to audio files from LIGO detections.

Skymaps

Visualize the source sky localization estimated from LIGO and Virgo observations.

https://www.gw-openscience.org/events/

Open data workshop



LIGO Scientific Collaboration

Open Data Workshop #1

Sunday - Tuesday, March 25 - 27, 2018

Data Workshop | Location | Lodging | Transportation | Registration | Program | Lecture Videos

Workshop Web Course

Overview

These are materials from the 2018 LSC Open Data Workshop. The web course:

- includes 5 hours of lecture
- includes 10-30 hours of data analysis programming exercises
- is intended for people holding or pursuing a graduate degree in physics, astronomy, or a related field
- targets learning objectives related to gravitational wave data analysis using LIGO and Virgo

https://www.gw-openscience.org/static/workshop1/

Open data workshop

gwpy	gwpy: readded missing notebook
intro	intro
parameter_estimation	pe: use lalsuite pypi package for lal
pycbc	inverse spectrum truncation in tutorial 4 as well
setup	Frozen software versions
skymaps	Adding subject directories

https://github.com/gw-odw/odw-2018/

GWpy

- A free python package for GW astrophysics
- Widely used for detector characterization
- Helpful data visualization
- Data filtering and signal processing
- Free!

`GWpy`: *a free python package for GW Astro*

- Documentation, examples https://gwpy.github.io/

- If you want to run `GWpy` locally

```
$ virtualenv GWpy
$ source GWPy/bin/activate
$ pip install gwpy
```

- Tutorials and set up https://github.com/gw-odw/odw-2018/

- Run the tutorials and do the challenges!