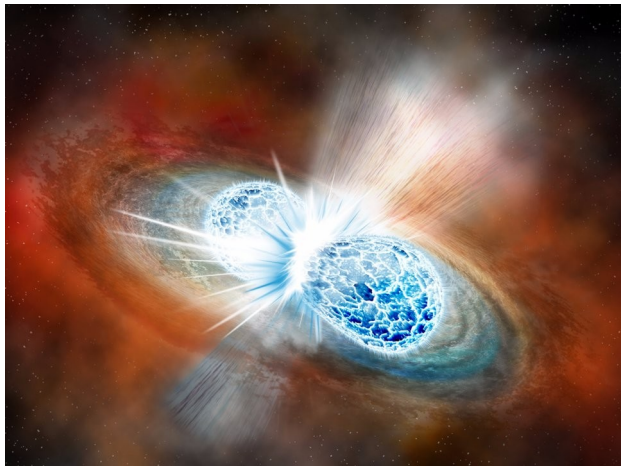
Estimating the Hubble constant with GWcosmo using GW170817 and NGC4993



S. Mastrogiovanni for the GWcosmo development team

Reference: arXiv1908.06050

Git repository: https://git.ligo.org/lscsoft/gwcosmo

GW170817 was our first GW event with a directly observed EM counterpart

- At 12:41:04 UTC a GW from the merger of two Neutron star is detected.
- +2 seconds later Integral and Fermi detect a GRB.
- ~10 hrs later a kilonova emission from NGC4993 is observed.

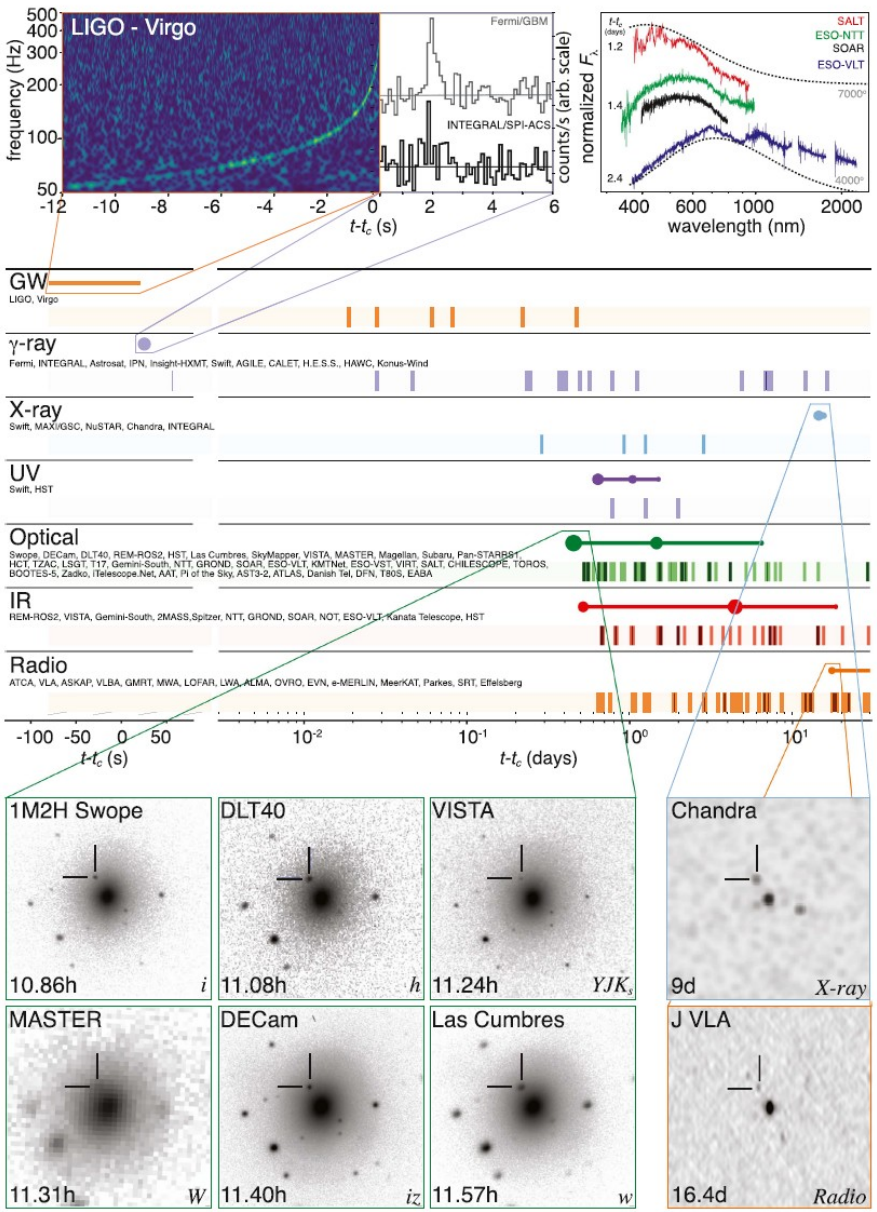
With GW170817 we have been provided:

Luminosity distance from GW170817.

Redshift identification of the host galaxy from NGC4993.

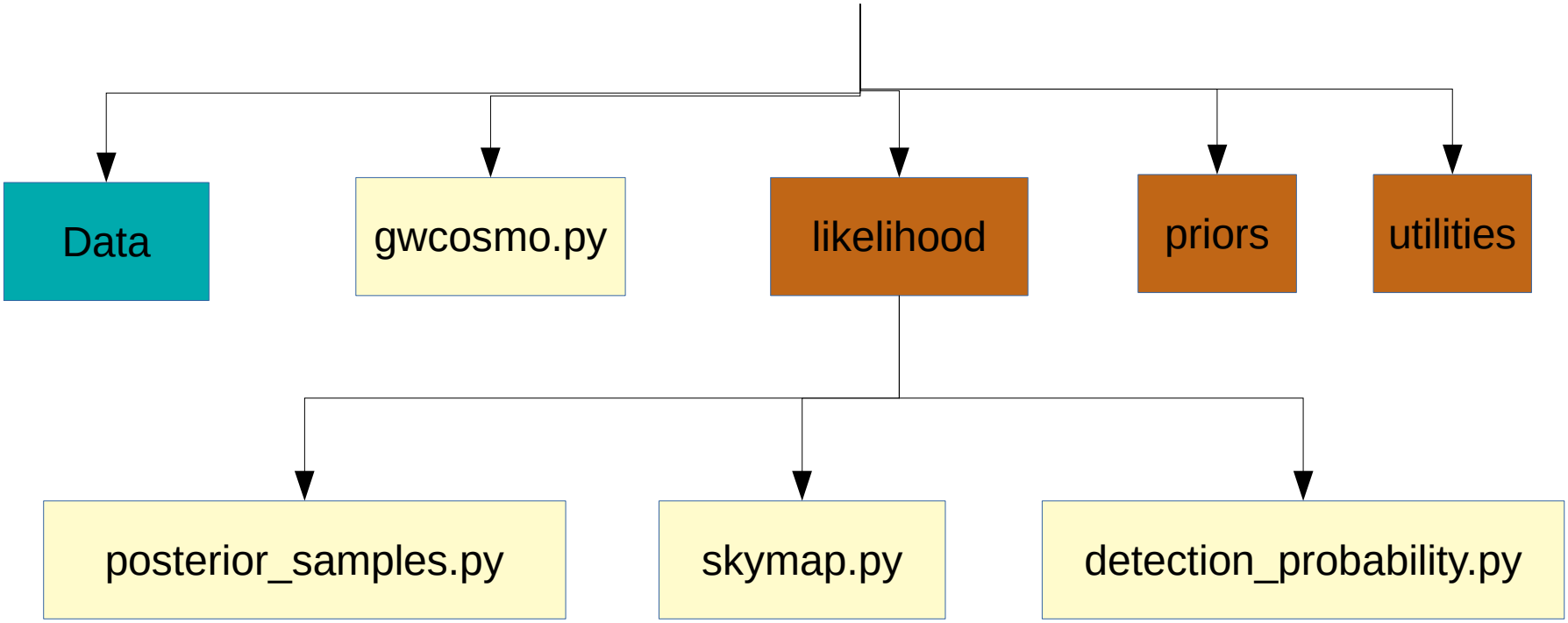
Peculiar motion of NGC4993.

We can measure the Hubble constant



B. P. Abbott et al 2017 ApJL 848 L13

GWcosmo package



Module

Precoumputed data

Module with submodules

Time for and hands-on session!

Check out

https://github.com/simone-mastrogiovanni/gdr_gwcosmo_tutorial_2020