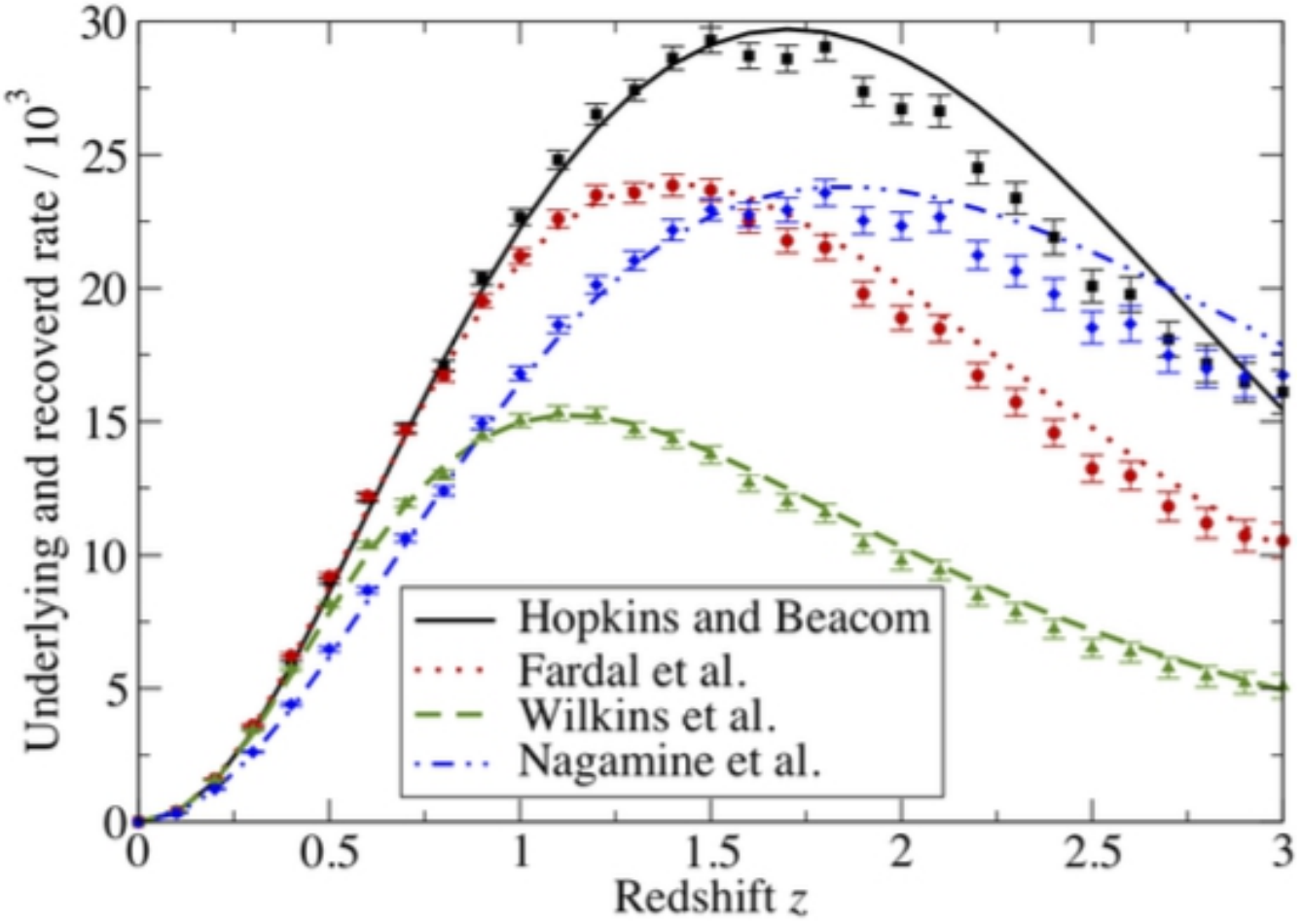
Panel

- Further discussion points:
  - How complete will galaxy catalogs be in 5 years, 20 years?
    - LSST to $z > 1$ with photometric?
    - LSST/WFIRST: get dedicated time on those to get more complete sample in particular portion of the sky
  - How much EM information can be folded in depending on BBH formation mechanisms? (Assume latter to be figured out observationally with 3rd generation detectors or before?)
    - If BH correlated with hydrogen: Ly-α forests as tracer up to high redshift?
    - Globular clusters?
    - Black holes may not be correlated with luminous matter (e.g. primordial)
    - Assuming BBH originate in AGN disks, focus on AGN hosts?
  - 2nd generation det., near term: what prior on H_0 would be appropriate?
- **Not covered in the talks:**
  - Reconstructing the merger rate as a function of *z* with 3rd generation det.
  - Primordial gravitational waves

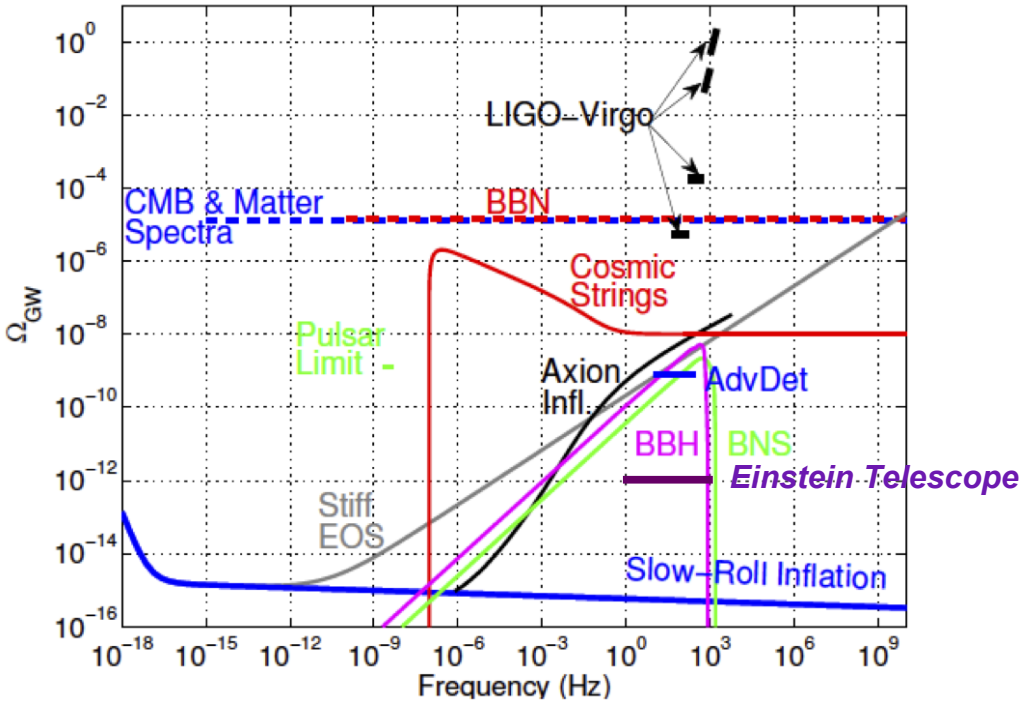
Reconstructing the merger rate as a function of redshift



Van Den Broeck, J. Phys. Conf. Ser. **484**, 012008 (2014)

Primordial gravitational waves?

$$\Omega_{gw}(f) = \frac{d\rho_{gw}(f)}{\rho_c d(\ln f)}$$



Courtesy T. Regimbau

- Possible signals of a primordial or other stochastic nature:
  - Termination of inflation (e.g. axion inflation)
  - Unusual ("stiff", w > 1/3) equation of state prior to BBN
  - Cosmic strings
  - ...
  - The unknown?
- Different scenarios yield different spectra, which may allow us to distinguish
- Factor 10^3 gain in Ω_{gw} over 2nd generation detectors