

New developments to the afterglow code bouldrome and comparisons with afterglowpy

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GRB and orphan afterglows 2 – November 18, 2022

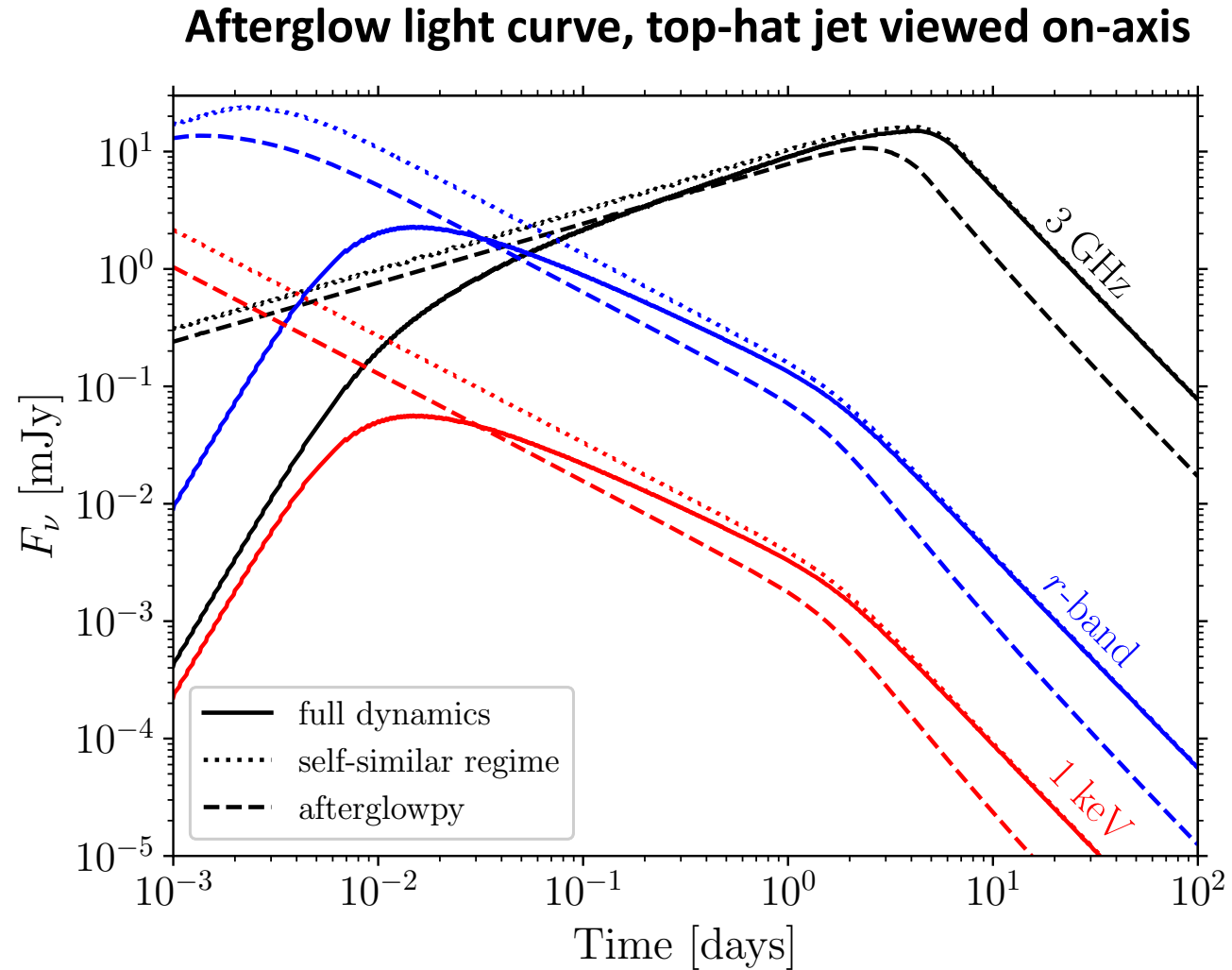


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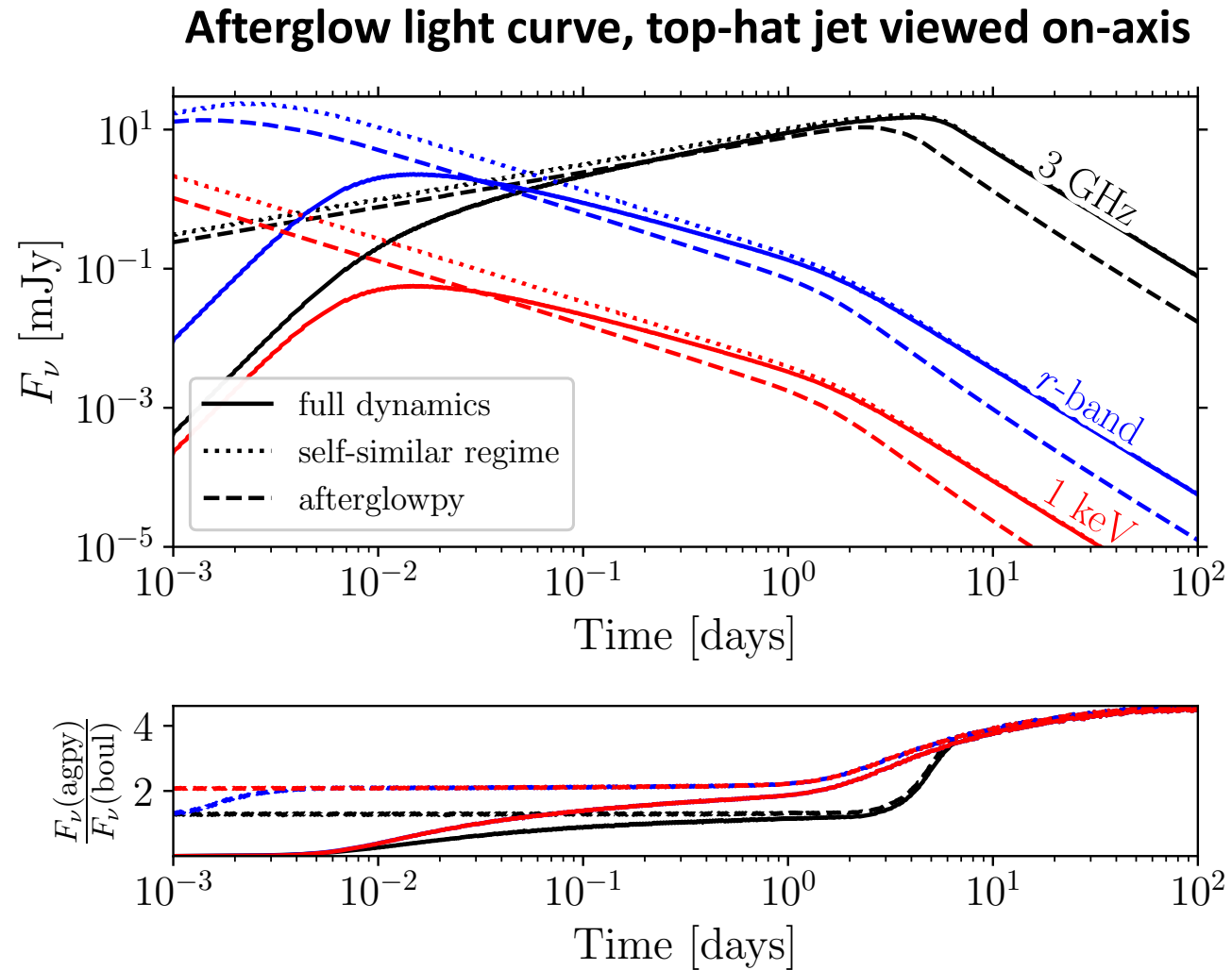
Modeling GRB afterglow emission: Ingredients

- **Dynamics:**
 - Emission sites: *Forward Shock*; Reverse Shock
 - ***Lateral Structure*** ; Radial Structure
- **Microphysics in the shocked region:**
 - *Energy injection; Partition of the energy between electron acceleration and magnetic field amplification*
→ standard parameters: $\epsilon_e, \epsilon_B, p$
- **Radiative Processes:**
 - *Synchrotron* ; Synchrotron Self-Absorption
 - ***Synchrotron Self Compton (SSC)*** ; Pair Production
- + **Obseving conditions:**
 - *Distance*
 - *Viewing angle*

Comparison with afterglowpy: dynamics

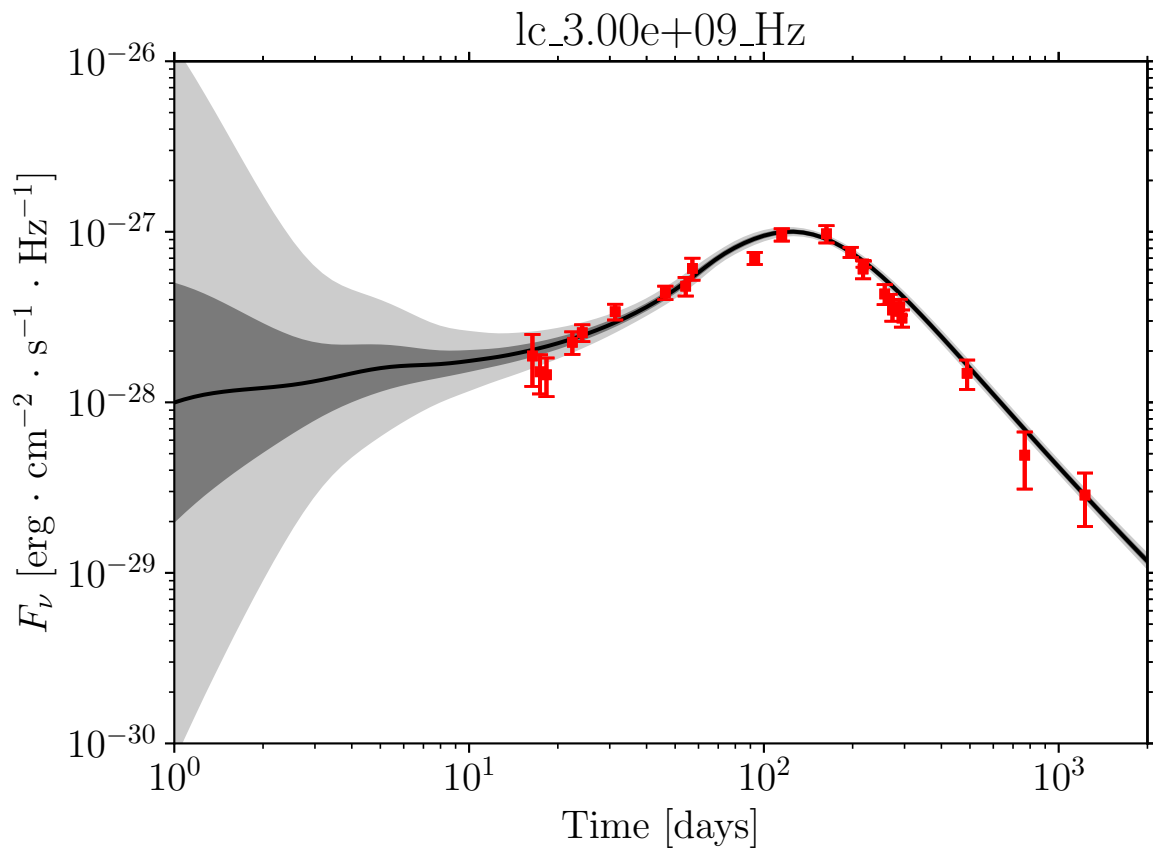


Comparison with afterglowpy: dynamics

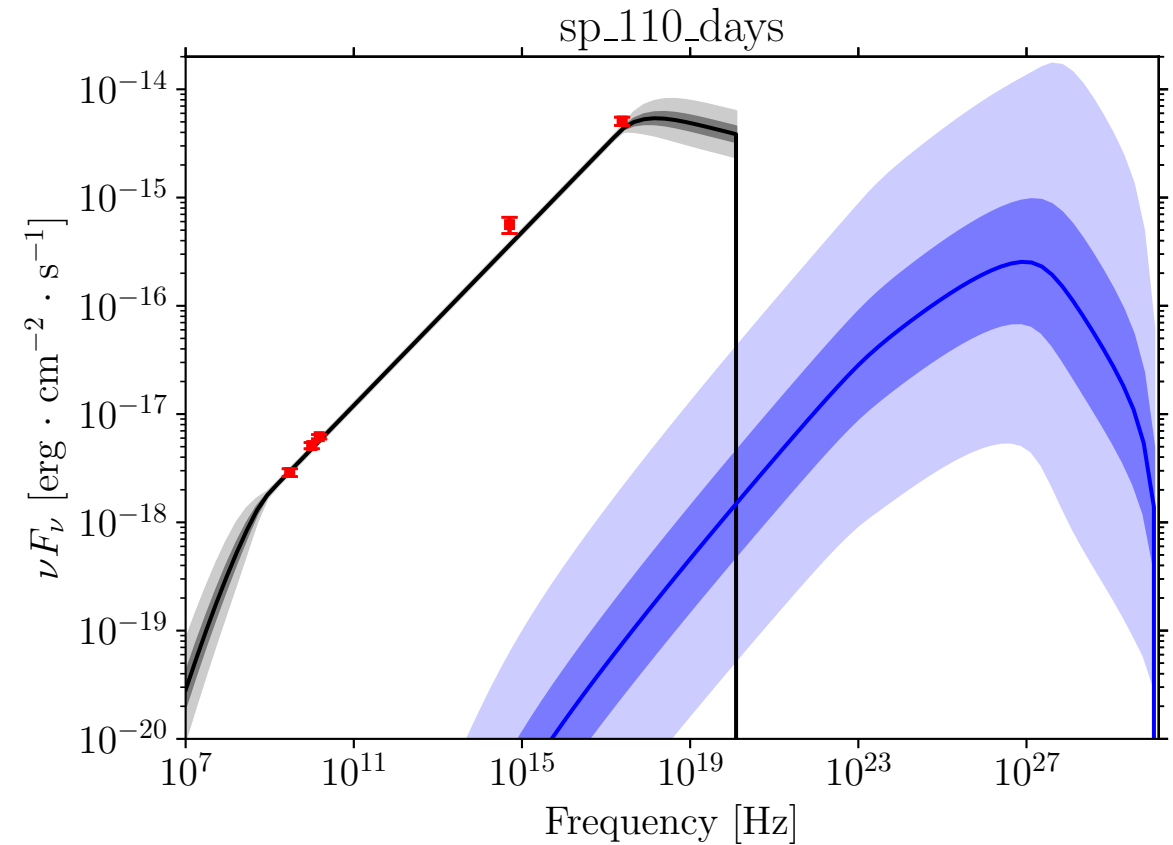


Results with multiwavelength data fitting

GW 170817 Radio light curve

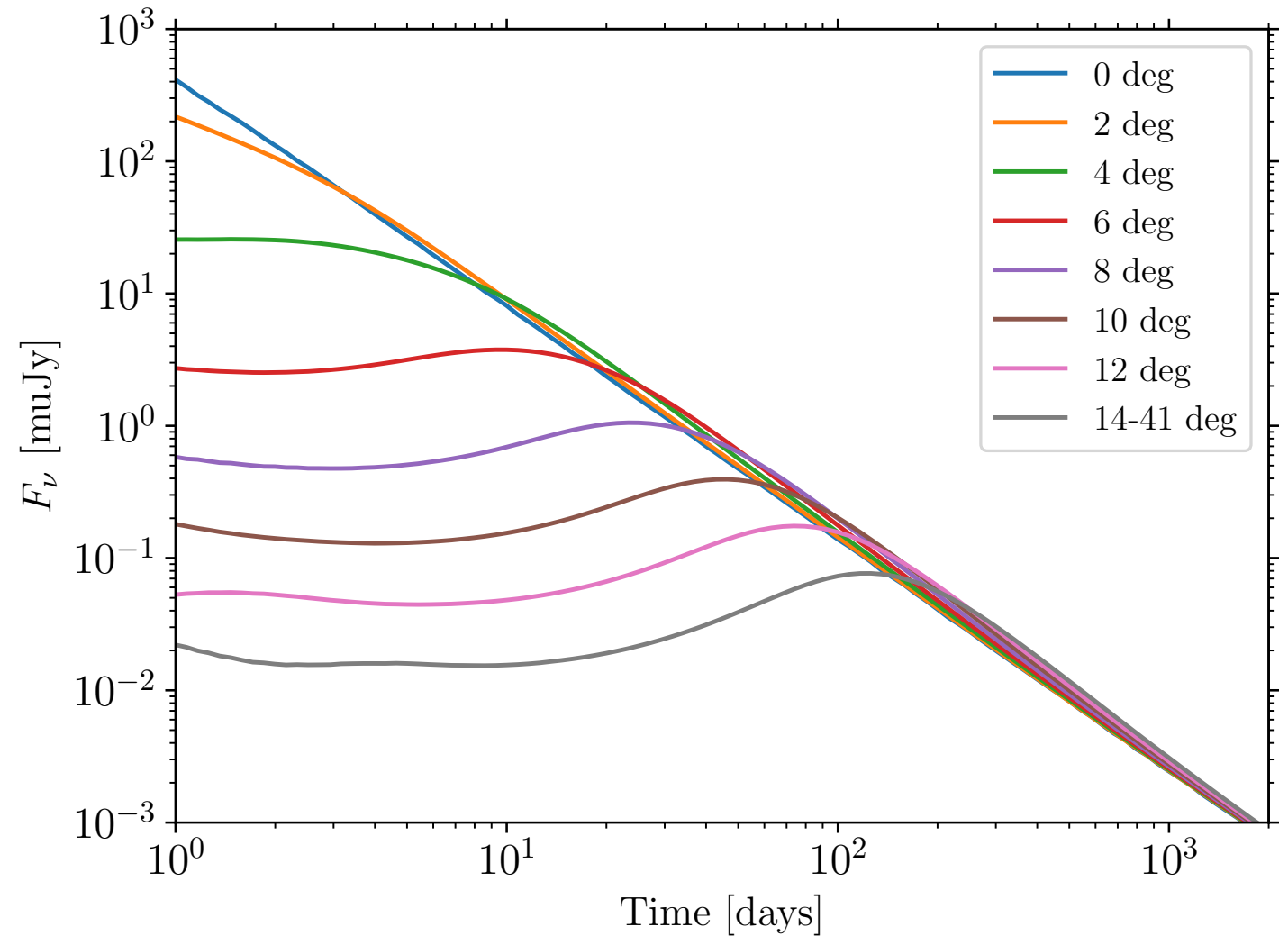


GW 170817 Peak spectrum



Impact of the viewing angle

Best-fit model for 170817
with different viewing angles,
at 600nm (flux density)



Comparison with afterglowpy: viewing angle

Best-fit model for 170817
with different viewing angles,
at 600nm (flux density)

