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## **The structure of Gamma Ray Bursts: beyond GRB 170817**

*Friday, 9 July 2021 06:30 (20 minutes)*

Combining information from the first gravitational wave detected gamma-ray burst, GRB 170817 with observations of cosmological GRBs holds important lessons for understanding the structure of GRB jets and the required conditions at the emitting region. It also re-frames our understanding of more commonly observed phenomena in GRBs, such as X-ray plateaus, and sets our expectations for future observations. I will present different lines of argument suggesting that efficient gamma-ray emission in GRBs has to be restricted to material with Lorentz factor  $> 50$  and is most likely confined to a narrow region around the core. GRB jets viewed slightly beyond their jet cores, result in X-ray plateaus that are consistent with observed light-curves and naturally reproduce correlations between plateau and prompt emission properties. For jets viewed further off-axis (that are expected to be detected as future GW triggered events) we provide new analytical modelling that reveals two different types of light-curves that could be observed (single or double peaked) and outlines how the underlying physical properties can be recovered from such observations.

**Primary author:** Dr BENIAMINI, Paz (Caltech)

**Presenter:** Dr BENIAMINI, Paz (Caltech)

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