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Study of the time delay between star formation and short gamma-ray bursts in a hierarchical Bayesian framework

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We performed a study of the short gamma-ray burst (sGRB) population using a hierarchical Bayesian framework to constrain the (hyper-)parameters of the population model. We considered both an empirical luminosity function model and a more complex quasi-universal structured jet model of the luminosity distribution of the events across the population. Under the assumption of a compact binary merger origin, we modeled the redshift distribution of the population by convolving the cosmic star formation history with a delay time distribution. In this talk, I will discuss the resulting insights on the sGRB delay time distribution, also highlighting the impact of ill-modeled selection effects.

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Classification de Session: Contributed talks