

Abstract Submitted  
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**Are there radio-loud and radio-quiet Gamma-Ray Bursts?**

JOSHUA OSBORNE, University of Texas, FATEMEH BAGHERI, The University of Texas at Arlington, AMIR SHAHMORADI, University of Texas — The potential existence of two separate classes of Long-duration Gamma-Ray Bursts (LGRBs) with and without radio afterglow emission, corresponding to radio-bright/loud and radio-dark/quiet populations, has been recently argued and favored in the GRB literature. The radio-quiet LGRBs have been found to have, on average, lower total isotropic gamma-ray emission ( $E_{iso}$ ) and shorter intrinsic prompt gamma-ray duration (e.g.,  $T_{90z}$ ). Also, an anti-correlation between the intrinsic prompt duration ( $T_{90z}$ ) and redshift ( $z$ ) of radio-loud GRBs has been discovered, which is reportedly missing in the radio-quiet class of GRBs. Here we discuss the significance of the differences between the energetics and temporal properties of the two proposed classes of radio-loud and radio-quiet LGRBs. We show that the proposed evidence in support of the two distinct radio populations of LGRBs can be explained away in terms of selection effects and sample incompleteness. This is based on the recent discovery of the strong positive correlation between  $E_{iso}$  and  $T_{90z}$ , in both populations of short-hard and long-soft GRBs, predicted and quantified by Shahmoradi (2013, ApJ 766:111-133) and Shahmoradi & Nemiroff (2015, MNRAS 451:4645-4662).

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