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Two-point correlation function of GRBs

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We analyzed the precisely located GRBs, i.e. GRBs with redshifts, and determined he Spatial Two-Point Correlation Function. The positional data was divided according to the origin of the redshift (afterglow or host galaxy). The possible correlation analysis between the GRB redshift and sky position found only one region, called the Faraway GRB Patch, where nine distant GRBs show deviation from the randomness with an ~1% significance. The result shows that the sky and the radial component of the GRB distribution could be factorized and both can be determined independently. The GRBs' cumulative monthly distribution was used to show that it is impossible to synthesize the Sky Exposure Function, even from the perfect observational logs. The full Spatial Two-Point Correlation Function estimators are not different from the random datasets for the full and the afterglow/host galaxy cases.

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