

Properties of a multi-template search for a transient signal

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We focus on long, but not infinite duration continuous wave signals and investigate the statistical properties of the detection statistic in the presence of a transient signal searched with a template grid set up for an always-ON continuous signal. We show how this affects the signal-to-noise ratio in real data in the presence of the noise. Based on this research, we propose a search scheme useful when there are no electromagnetic observations to inform on the time of occurrence of the signal.

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