

INSTRUMENTAL NOISE TRANSIENTS IN LISA

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The extraordinary sensitivity of gravitational wave detectors means they can be disturbed by instrumental and environmental transients and produce non-stationary data. The LISA Pathfinder mission in particular had a significant population of transients of incompletely known origin, which if present in LISA will increase the noise background, diminishing sensitivity to true gravitational waves and even causing possible false alarm detection candidates. This work describes the characteristics of this population of data transients in Pathfinder, will explore their effect on the complicated time delay interferometry output needed for LISA, and characterize the disturbances and possible mitigation strategies using time domain mission simulations.