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The Effect of White Nonstationary and Colored Nonstationary Noise on Signal Detection[1] MAURICIO FLORES, MATTHEW BENACQUISTA, ALEXANDER STROEER, University of Texas at Brownsville — We analyze the effect of non-stationary noise on the detection of signals on unevenly sampled data. Initial frequency estimation is obtained from a Lomb-Scargle periodogram; which is followed by a global multi-start optimization, as working on a dense local Nelder-Mead iterator for parameter estimates. It has been found that a varying white noise level has no effect on the required relative signal-to-noise ratio for detection in the proposed algorithm, though affecting the absolute amplitude strength of the signal recording. Further analysis has been done on realistic colored noise. Different whitening routines have been incorporated to the proposed algorithm. Detection efficiency is compared for these different routines.

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