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# situ onset time estimation of the explosion events by classical statistical methods and wavelet analysis

The topic of this paper is algorithm for in situ estimation of the time of arrival, or TOA, which origin are events that have sudden rise of the pressure and may occur in different environments such is air, water or ground. The algorithm is adaptive and based on specific approach that generally means using two-step method. The first is wavelet decomposition of the signal in purpose to rough estimate existence and time position of the described events, and the second understands detailed analyze of the data segment, which is identified by wavelet analysis, and automatic onset time estimation. Such approach enables very precise estimation of the onset time, or TOA. In many cases, such approach enables to reject false events that are consequence of multipath transmission of the pressure waves (infrasound, sound, underwater sound and seismic waves). In this paper, tens of experiments that concerned artillery gun projectiles verify the quality of proposed method.

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