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MONITORING VARIATIONS IN FULL CROSS-CORRELATION FUNCTIONS AT REGIONAL SCALE USING AMBIENT NOISE RECORDS

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Abstract

Study on ambient noise cross-correlation has been progressively developed. However, it is still challenging for noise sources are not evenly distributed. Therefore, we are concerned with how the multiple parts of the noise cross-correlation function are affected by noise sources, so as to obtain more valuable information. The temporal variations of traveltime and amplitudes of noise cross-correlations computed in a moving 5-day window for the two period ranges corresponding to the primary (10–25 s) and secondary (5–10 s) microseism. From the analysis of the distance and azimuth of station pairs, it shows that time fluctuations of noise cross-correlation effected by noise source are not more than 0.01 s and smaller than 1 per cent in the used period. In addition, the amplitude variations of three parts of the reconstructed cross-correlation shows their different sensitivity to noise sources. With the comparison of the surface wave and coda of noise cross-correlation, the stability of coda is further verified.

Keywords: ambient noise, source distribution; amplitude; coda of noise cross-correlation

Received: February, 2016; *Revised final:* June, 2017; *Accepted:* June, 2017

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