

A METHOD OF ACOUSTIC WAVE REGISTRATION AND DETERMINATION THEIR GENERATION REGION

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МЕТОДИКА РЕГИСТРАЦИИ АКУСТИЧЕСКИХ ВОЛН И ОПРЕДЕЛЕНИЯ РАЙОНА ИХ ГЕНЕРАЦИИ

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Here is presented a method of acoustic wave registration with using of a synchronous LF broadcasting system.

Due to a continuation of nuclear tests, a control of testing areas is a topical question. Many methods of nuclear explosion registration are based on a ground measurement of a weak acoustic wave or seismic oscillations. All of them have a common imperfection - it is necessary to locate sensors near testing area. Presenting method of detection and determination of underground nuclear explosion location is based on a registration of ionospheric disturbances induced by acoustic waves at the region of LF signal reflection. The measuring complex created in the institute of the Ionosphere /1/ allows to register amplitude-frequency characteristics of composite signal from synchronous broadcasting net.

At the altitude of about 70 km a temperature profile forms wave guide, in which acoustic waves can propagate at a long distance /2/. It was found experimentally that acoustic waves produced by cosmic rocket launching propagate at 2500-3000 km /3/. Some examples of spectra of radio signals received from radio stations at Tashkent (162 kHz) and Chilik (180 kHz) under quiet conditions (A) and during an acoustic wave arrival (B) are presented at figures 1 and 2. This figures show clearly a distortion of signal spectra at the period of an acoustic wave effect. These radio signal spectra have been detected during a launching from a space center Baykonur, January 29, 1998. A knowledge of geometry of synchronous broadcasting radio tracks and a time lag of an ionospheric response to acoustic wave disturbance allows easy to determinate a region of acoustic wave generation.

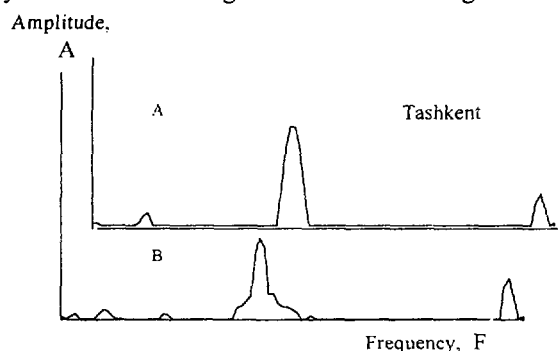


Figure.1

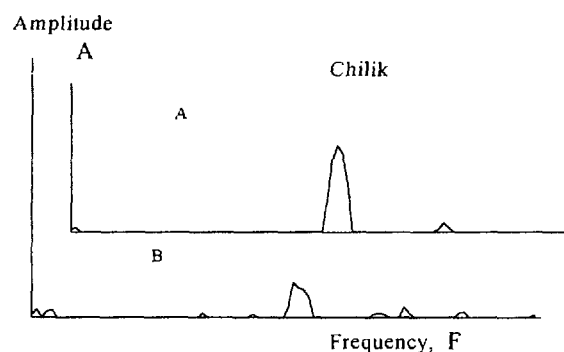


Figure.2

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