

## ***Approaches of determination of the meteoroid characteristics according to seismic data***

Victor S Seleznev,  
Russian Academy of Sciences, Russia



### ***Abstract***

Determining such characteristics as the trajectories, times, and energies of explosions of meteor bodies that have collapsed in the Earth's atmosphere is a very difficult problem for meteor astronomy. In the modern world, cases of fixing falls and explosions of meteoroids on video recording devices are very common. The decoding of the videos gives only approximate characteristics of the meteoroids, due to the fact that most of the devices in whose frame the ones accidentally fell are not designed for high-precision video recording. The study showed that, interpreting the records of seismic waves generated by the explosion of a meteoroid in the atmosphere and recorded by seismic stations on the Earth's surface (Fig. 1), it is possible to determine the required parameters with high accuracy. The approaches to determining the parameters of two events — the falls and explosions of meteoroids in the region of the city of Chelyabinsk and the city of Sayanogorsk (Russia) on February 15, 2013 and December 6, 2016, are considered in detail.



### ***Biography:***

Victor Sergeevich Seleznev—Deputy Director of Geophysical Survey of RAS and Director of Seismological Branch of Geophysical Survey of RAS, Russia, city of Novosibirsk. His areas of expertise involve local and engineering seismology, geophysical methods of research of the Earth deep structure. He develops methods of seismic monitoring of the state of large buildings and equipment.

### ***Speaker Publications:***

1. Seleznev V.S., Liseikin A.V., Emanov A.A., Belinskaya A.Yu. The Chelyabinsk meteoroid: a seismologist's view. Doklady Earth Sciences. 2013. T. 452. № 1.976-978.
2. Seleznev V.S., Liseikin A.V., Emanov A.A., Belinskaya A.Y. Geophysical observations during the flight of the Chelyabinsk meteoroid. Russian Geology and Geophysics. 2014. T. 55. № 3. 405-410.
3. Seleznev V.S., Liseikin A.V., Emanov A.A., Belinskaya A.Y. Meteoroid Chelyabinsk (seismologist point of view). In digest: Meteorite Chelyabinsk – a year on Earth. Materials of Russian national academic conference. Compiler: N. A. Antipin. 2014. P. 678-681.

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