

## The August 17, 1914 Bilimbaev earthquake: location based on instrumental data

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**Abstract** The parameters of the hypocenter of the Bilimbaev earthquake that occurred on August 17, 1914 are located. We performed earthquake location based on our compilation of all available seismological bulletins of the time that included data from the ISC-GEM (International Seismological Centre-Global Earthquake Model) project, the EuroSeismos project and the Geophysical Survey of the Russian Academy of Sciences. The location was performed using a modified generalized beamforming method based on the ak135 travel time model and regional model by the Ural region. The new epicenter is removed from the epicenters, previously determined from macroseismic and partly instrumental data, at a distance not exceeding 28 km. The previously calculated earthquake epicenters are in the region of the error ellipse of the new epicenter. The depth values indicated earlier also lie in the range of possible depths of the focus of the specified hypocenter. Thus, all the epicenters, including the new one, are relevant and with equal probability can be considered as the true epicenter of the earthquake.

**Keywords** Bilimbaev earthquake, parameters of the hypocenter, relocate.

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