

Seismic monitoring of Landslides Hazard on Angren brown coal deposit (Eastern Uzbekistan)

Irina Sidorova (1) and Nurbek Inatov (2)

(1) Institute of Geology and Geophysics of Uzbek Academy of Sciences, Head, Lab. of Lithosphere structure, Tashkent, Uzbekistan (sidoirina@yahoo.com), (2) Institute of Geology and Geophysics of Uzbek Academy of Sciences

A comprehensive study of seismic records, which produced industrial explosions, will allow geophysicists with greater accuracy for the identification of seismic events, work methods of recognition, create high-quality catalogs not only explosions, but also recorded earthquakes that eventually significantly affect the accuracy of assessment of landslide hazard within the open pit.

On the territory of Angren brown coal deposit margin zone network of reference point seismic sounding was created by earthquake converted wave method. 4 points of ECWM were divided and fixed on the edges of open pit, where were produced 10 seismic survey data over the 8 months in 2015. Survey results have analyzed, studied the characteristics of signals on the seismic record. Characteristic form of seismic records of nontraditional source in seismology - a landslide has been established. A comparison of these records with the explosions and earthquakes seismograms has been conducted and revealed that the seismic records of explosions in Angren brown coal open pit and distant earthquakes are much higher frequency than seismic records of landslide processes. According to the seismic monitoring polarization graphics were obtained from three seismic stations recordings. It was revealed that in the early part of the record can be considered close to the elliptical and complex. The polarization characters at Z-Y-X axes of all stations on the wave arrivals identical to each other and show the direction of landslides. For example, the Southern landslide found mostly north-west movement. Similar observations will be continued, since the task of identifying landslide by seismic monitoring progress needs to be prolonged and constant supervision of the Angren open pit.