

ABSTRACT
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Geophysical Benchmarking of Cave Cavities and Underground Water Horizons

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Seismic-electric effect method was applied in field to forecast subsurface cave dome cavities and to benchmark underground water horizons. A source of seismic waves were repeated blows of a heavy hammer or powerful signals of magnetostrictive installation. Main frequency used was 500 Hz. Passing layers the seismic wave caused electromagnetic fields on the boundary interfaces. Electric responses of these electromagnetic fields were measured on a surface by pair of grounded dipole antennas or by one pivot and a long wire antenna acting as a capacitive pickup. The arrival times of responses from a cave cavity and from a water horizon correspond to the time of seismic wave propagation from a source to the cavity or to the water interface correspondently. The method depths successfully investigated were between 2,5-25m. An advantage of our method in comparing with usual seismic ones is in a fact that signals registered from boundary interfaces are distinctly traced on a receiver to be available for a proper treatment.