

## Long-baseline hydrostatic level

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**Abstract.** The authors describe the measurement capabilities of hydrostatic leveling with the base 1–3 km, make physical assessment of the effects associated with the influence of change in the parameters of the weather conditions (atmospheric pressure, temperature, temperature gradients along the route), consider the dynamic characteristics of such a device and its limiting resolution, defined as own thermal fluctuations and the influence of seismic noise. We also discuss a new radio engineering measuring method of variations in the level of liquid in the measuring vessel, characterized by a large dynamic range and high sensitivity, which are necessary when building long-base systems. Important advantages of the method are simplicity and reliability of the instrument construction.

**Keywords:** hydrostatic level, level sensor, dynamic range, method of measurement, long-baseline systems, geophysical measurements.