

The invention relates to means of geo-physics and geology for measurement of components of gradient of force of gravity. Method for measurement of components of force of gravity and gradient meter is in fact that as test bodies one uses at least two quantum frequency standards, with determination of effect of gradient of force of gravity by value of change of relative difference of signal frequency that is measured with at least one frequency comparator with spectrum analyzer during given time or at displacement of gradient meter. One sets quantum frequency standards to cardan suspensions that are placed in cardan suspension installed on adjustment plate as well. The plate together with comparator and spectral analyzer, radio receiver with comparator and spectral analyzer connected to quantum frequency standards, respectively, are installed on movable platform in horizontal position, one takes position of one of quantum frequency standards as fixed position with rotation of the other quantum frequency standard with respect to center of its cell and by maximal values of change of respective difference of frequency of signal of quantum standards one determines vertical directions of axes of maximal sensitivity. One directs axes of maximal sensitivity of quantum frequency standards with respect to vertical and geographic directions by means of rotary circle depending on chosen component of tensor of gradient of force of gravity, one performs translational displacement of quantum frequency standards by means of platform, and by measured with comparator with spectrum analyzer value of change of respective frequency difference and spectral density of power of signal one determines components of gradient of force of gravity. The invention provides increase of accuracy of measurement of components of gradient of force of gravity.