The deformations have been measured in Slovmag Lubeník potassium mine since 2008 by quite a new apparatus – vertical static pendulum. The method and precision of measurement allow to pursue the short-term deformations of the staple shaft (for example due to seismic waves), the middle-term deformations (due to tides, ventilation variations or tectonic stress changes) as well as the long-term deformations, caused for example by changes of the excavation technology or annual stress variations.

Although the technological operations have the biggest influence on the deformations of the staple shaft, their amplitude varies according to the tectonic stress in the region under study. It was observed that the massif response to external influences was higher before the biggest world earthquakes (Tonga 19.3.2009 M=7.6, Chile 27.2.2010 M=8.8) and changes of the tilt of the staple shaft were observed too.

After the comparison of measurement of the tilt in Lubeník mine with other measurements in the Czech Republic we can conclude that the periods of the anomalous tilt or anomalous response of the massif to external forces are not of local origin based in the Lubeník region but they have a global character. They are probably generated by global tectonic waves that spread from the focal areas of the biggest earthquakes.