



## **Length of a day and the L'Aquila earthquake of 6th April 2009**

Lubor Ostrihansky

Prague 5, Czech Republic (ostri@karel.troja.mff.cuni.cz)

The length of a day variations (LOD) are discussed showing the Earth rotation velocity increment from 1974 to 2005, i.e. the day has been shortened for 5 ms. The LOD graph shows that three stronger earthquakes from the Central Apennines of that period Norcia 1979 ( $M = 5.9$ ), Calforito 1997 ( $M_{max} = 5.9$ ) and L'Aquila 2009 ( $M = 6.3$ ) were triggered in the Earth's rotation deceleration and comparison with tectonics shows their position on the normal faults. A special part of the LOD graph was distinguished in 2002 – 2005 period of maximum Earth's velocity, comprising almost continuous series of earthquakes, and those earthquakes of that period coincident with LOD minimum 13.7 day peaks (maximum velocity) take on the tectonic map a position of roughly semicircle around the 6 April 2009 L'Aquila earthquake epicenters and are triggered on the thrust faults. The detailed investigation of 6th April 2009 earthquake shows that earthquakes are situated on the western side of normal faults and considering the trend of destruction intensity, it is shown that hanging wall blocks move during the Earth's deceleration westward. Earthquakes triggered during the Earth's acceleration on thrust faults confirm eastward compression and possible eastward movement of hanging wall blocks. This presents a logic explanation of postcollisional extensional collapse of the Apenninic thrust belt.