



Analysis of seasonal signal in station position time series from the geodetic VLBI data

O. Titov

Geoscience Australia, Canberra, Australia (oleg.titov@ga.gov.au / Fax: +61 2 6249 9929)

Currently VLBI technique measures site position on the surface of the Earth with formal accuracy up to several millimetres. Long-term time series of site positions are available now since 1979. Seasonal signals are present in the time series, especially in the height components. Other independent techniques (GPS, SLR, DORIS) confirm existence of this deformation. The amplitude of the signal can reach 1-2 centimetres providing additional uncertainty of the adopted ITRF positions and velocities. There are many effects that may contribute to the seasonal variation in the geodetic time series. Geophysical signal such as loading effects can describe the global character of the phenomena, whereas, antenna deformations are responsible for additional local variation. This paper presents an analysis of the seasonal signal for several dozen VLBI sites and suggests ways to mitigate the effect.