

Abstract

Impact of atmospheric turbulence on geodetic very long baseline interferometry

We assess the impact of atmospheric turbulence on geodetic very long baseline interferometry (VLBI) through simulations of atmospheric delays.

VLBI observations are simulated for the two best existing VLBI data sets: The continuous VLBI campaigns CONT05 and CONT08. We test different methods to determine the magnitude of the turbulence above each VLBI station, i.e., the refractive index structure constant C_n^2 .

The results from the analysis of the simulated data and the actually observed VLBI data are compared. We find that atmospheric turbulence today is the largest error source for geodetic VLBI. Accurate modeling of atmospheric turbulence is necessary to reach the highest accuracy with geodetic VLBI.



Dr. Tobias Nillsson



Überreichung des Preises durch:
Hans-Ulrich Müller, Fa. Leica,
Univ. Prof. Dr. Harald Schuh, ÖGK-Präsident