Seminar

Wednesday, November 7
10:30am
Room E4

VLBI2010: The Next Generation

Dr. Bill Petrachenko from NRCan is a Canadian expert on very long baseline (radio) interferometry (VLBI)

Very Long Baseline Interferometry (VLBI) has a unique role among the space geodetic techniques. Its use of the far distant nearly point-like quasars as reference objects makes it ideal for measuring the orientation of the earth in space and for providing long term stability of scale to global geodetic reference frames. In 2003, the International VLBI Service for Geodesy and Astrometry (IVS) began an effort to define by 2010 a next generation VLBI system capable of 1 mm postion accuracy, continuous observations, and 24 hour latency between observations and first products. After the report of an initial working group, progress toward these goals continued in two main areas: the development of Monte Carlo simulators as tools for evaluating the impact of proposed system changes, and a NASA sponsored proof-of-concept development and experimental program. In addition to the use of a larger better distributed network and paying close attention to systematic errors, the main tactics being considered so far for achieving the VLBI2010 goal of 1 mm position accuracy are an order-of-magnitude increase in both the number of observations per day and the precision of each observation. Status to date of the VLBI2010 effort will be presented.