SHAO Analysis Center 2009 Annual Report

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Abstract

This report gives an introduction to the astrometric/geodetic activities of the Shanghai Astronomical Observatory (SHAO) in 2009. They are summarized as follows: the observation and processing of the VLBI experiments with the Chinese VLBI Network (CVN) and the research activities geared towards VLBI2010.

1. General Information

We use the CALC/SOLVE system for routine VLBI data analysis. The members involved in the IVS analysis activities are Guangli Wang, Jinling Li, Bo Zhang, Li Guo, Fengchun Shu, and Zhihan Qian.

2. Activities in 2009

We participated in some IERS/IVS campaigns aimed at comparisons of reference frames and/or Earth Rotation Parameters. Our research activities in 2009 were related to the VLBI experiments and data analysis of the Chinese VLBI Network (CVN), as well as to observations, models, algorithms, and software implementation geared towards VLBI2010.

2.1. Astrometric and Geodetic VLBI Experiments and Data Analysis

For the compilation of ITRF2008, we submitted our solutions to IVS. We conducted VLBI experiments using the CVN, including the antennas at Shanghai, Urumqi, Beijing, and Kunming, and we performed the related data analysis in order to determine the station coordinates, especially those of the two new stations for the Chinese space exploration projects, as well as for the Project of the Monitoring Network of the Chinese Mainland Geological Environment.

2.2. Work Concerning VLBI2010

We set up a domestic seminar in 2008 to investigate and evaluate the current status of astrometric and geodetic VLBI, and our goal is to give a report about the efforts to be done towards VLBI2010 in the areas of observations, models, algorithms, and software. As we know, the IVS community has been carrying out similar work, but by doing the work, we are trying to determine some aspects in which we can make contributions, and we are also trying to promote the theoretical abilities of our research group.

2.3. Site Survey at the Sheshan 25-m Radio Telescope

We conducted a site survey at the Sheshan 25-m radio telescope in July and August 2008 in order to develop a strategy of observing and data analysis, to develop software, and to check the precision of parameter solutions. This survey is a part of the whole effort to determine the local tie parameters among the sites of VLBI and SLR at Sheshan. Such parameters are important to

the compilation of terrestrial reference frames based on various space geodetic techniques. The data were re-analyzed this year.

3. Plans for 2010

We will enhance the IVS analysis work, return to our normal contributions of solutions to IVS, and make more active efforts to be involved in the activities of the VLBI community.