

IVS2016



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ivg::ASCOT: The Development of a new VLBI Software Package

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Content :

Although several fully developed VLBI software packages exist already, the VLBI group of the Institute of Geodesy and Geoinformations of Bonn University (ivg) started implementing a new analysis toolbox. The main reason is the need for a flexible environment, which allows for straightforward implementations of new scientific and software-related ideas for VLBI data analysis. Furthermore, we wanted to be able to control and understand the whole processing chain and, last but not least, the developments, which have been performed in Bonn in recent years, should be accumulated under a unified software installation. The software is implemented in C++ and should finally be able to perform schedules of VLBI sessions, simulation of VLBI observations as well as geodetic data analysis and intra-technique combination. Thus, it is named: Analysis, Scheduling and Combination Toolbox of the Institute of Geodesy and Geoinformations VLBI group (ivg::ASCOT). Currently, we are able to perform single-session data analysis in line with the IERS2010 Conventions, at a stage where the ambiguities have been resolved. The VGOS-DB data format is used as input. Furthermore, global solutions to derive celestial and terrestrial reference frames can be performed on the normal equation level. This can be done based on our single session analysis as well as with SINEX input from other analysis centers. Intra-technique combinations of several solutions complete the initial functionality of the software package. In this paper, we present the modelling of our toolbox as well as some key ideas of our processing and some first results.

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