Preface

The IERS Workshop on Combination Research and Global Geophysical Fluids taking place in Munich, November 18–21, 2002, focused on two major themes, namely the combination of the space geodetic techniques at various levels and the steps required to proceed towards a rigorous combination of the IERS products and the status and future activities within the Global Geophysical Fluid Centres.

The first and second day of the workshop was devoted to the three primary IERS products, namely the International Terrestrial Reference Frame (ITRF), the International Celestial Reference Frame (ICRF), and the Earth Orientation Parameters (EOP; including the new IAU recommendations) and the rigorous combination of these three components into a consistent set of high-accuracy products. To reach such a goal also the IERS conventions and standards for modelling, parameterisation and analysis strategies had been considered. In view of the requirements of the new satellite missions, the demanding questions concerning global change and the interaction between components of the Earth's system to be studied, these products and their accuracy and consistency become of more and more importance.

Reports on the progress made in analysing the IERS EOP Alignment Campaign and the IERS SINEX Combination Campaign, major research activities of the Combination Research Centres (CRCs), Products Centres (PCs) and other interested parties, had been of special importance for this workshop. Based on these experiences the primary set of IERS products will be considerably improved and well aligned in the future.

Approaching the 5th anniversary of the establishment of IERS´ Global Geophysical Fluids Centres (GGFC), the second part of the workshop was devoted to an insightful review of what has been reached, what is planned for the future, and how to better define the roles and responsibilities in serving the community. It is a quickly evolving field of research with ever-increasing requirements on physical reference frames that demand understanding, modelling, and prediction of the global geophysical fluids and their effects on Earth rotation, time-variable gravity, geo-centre motion, and surface deformations. During a two-day portion of the workshop (days 3 and 4) technical reports and plans from each of the eight Special Bureaus (Atmosphere, Oceans, Hydrology, Tides, Mantle, Core, Gravity/Geo-centre, Loading) were presented.

The IERS workshop on Combination Research and Global Geophysical Fluids was a technical forum consisting of 95 IERS representatives and scientific individuals from 21 countries, that discussed the scientific contributions, different viewpoints as well as concerns about the future of the IERS products. The main goal of the workshop clearly was to start with the improvement of all the various IERS products in accuracy, consistency, stability, timeliness, user-friendly access, and documentation, to make first steps towards a rigorous combination of the various products and thus to contribute significantly to the realization of an "International Global Geodetic Observation System" (IGGOS).

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