The IERS Special Bureau for the Oceans

Richard S. Gross* for the IERS SBO Team

*Jet Propulsion Laboratory, California Institute of Technology, Pasadena, Calif.

The oceans have a major impact on global geophysical processes of the Earth. Nontidal changes in oceanic currents and bottom pressure have been shown to be a major source of polar motion excitation and also measurably change the length of the day. Changes in the mass distribution of the oceans cause the Earth's gravitational field to change, an effect which is being accurately measured by the CHAMP and GRACE satellite missions. As the mass distribution of the oceans change, the center-of-mass of the oceans will change which in turn causes the center-of-mass of the solid Earth to change. The changing mass distribution of the oceans also changes the load on the oceanic crust, thereby affecting both the vertical and horizontal position of observing stations located near the oceans. Recognizing the important role that nontidal oceanic processes play in Earth rotation dynamics and terrestrial reference frame definition, the International Earth Rotation Service (IERS) has created a Special Bureau for the Oceans as a component of its Global Geophysical Fluids Center in order to facilitate research into these and other solid Earth geophysical processes affected by the oceans. An overview of the IERS Special Bureau for the Oceans will be presented and its current status and activities described.