

3.5.6.3 Special Bureau for Tides

The Special Bureau for Tides collects datasets related to the effects of tides on Earth rotation and geocenter motions. It also collects tables of spherical harmonic coefficients for both oceanic and atmospheric tides. The data archive that the Bureau maintains has slowly grown as individual tidal investigators contribute their modeling results. Although there are many new ocean tide models still appearing in the oceanographic community as a result of the Topex/Poseidon altimeter mission, not all these models are appropriate for the Bureau because not all investigators are able to provide tidal currents; currents are as important as elevations for studying tidal variations in Earth rotation. There is currently a lack of data related to atmospheric tides, although in 2001 the Bureau added spherical harmonic coefficients for a new model of the S2 air tide. Work is also planned to collect similar older models.

The web site of the Special Bureau <bowie.gsfc.nasa.gov/ggfc/tides> continues to see a growing number of "hits" per day. By far the most popular destination is a short tutorial that explains tidal variations in Earth rotation; apparently this high activity is caused by a number of other tidal sites linking to this page.

A major area of planned improvement over the next year is the addition of data related to long-period tides and atmospheric tides. The latter are especially difficult because most meteorological centers distribute products with a 6-hour sampling, which is the Nyquist period of the S2 tide. Temporal interpolation procedures are being investigated to partially overcome this difficulty. Such work has already revealed phase lag errors in the tides from the NCEP and ECMWF centers.

Richard D. Ray