

List of Acronyms and Definitions

AAM = Atmospheric Angular Momentum (10^{24} kg m²/s)

AVISO = Archiving Validation and Interpretation of Satellite Oceanographic data

CNES = Centre National d'Etudes Spatiales

ESA = European Space Agency

EUMETSAT = European Organization for the Exploitation of Meteorological Satellites

FES = Finite Element System

FES2012 is the last version of the FES (Finite Element Solution) tide model developed in 2012. It is a fully revised version of the global hydrodynamic tide solutions initiated by the works of Christian Le Provost in the early nineties. The new model has been developed, implemented and validated by the LEGOS, NOVELTIS and CLS, within a CNES funded project.

FES2012 takes advantage of longer altimeter time series, improved modeling and data assimilation techniques, and more accurate ocean bathymetry. Special efforts have been dedicated to address the major non-linear tides issue and to the determination of accurate tidal currents...

(<http://www.aviso.altimetry.fr/en/data/products/auxiliary-products/global-tide-fes/description-fes2012.html>)

GMMC = Mercator Coriolis Mission Group

(<http://www.mercator-ocean.fr/eng>)

GRACE = Gravity Recovery And Climate Experiment

GRACE, twin satellites launched in March 2002, are making detailed measurements of Earth's gravity field which will lead to discoveries about gravity and Earth's natural systems. These discoveries could have far-reaching benefits to society and the world's population.

(<http://www.csr.utexas.edu/grace/>)

GOCE = Gravity field and Ocean Circulation Explorer

ESA's dart-like Gravity field and Ocean Circulation Explorer (GOCE) Earth Explorer orbits as close to Earth as possible - just 260 km up - to maximize its sensitivity to variations in Earth's gravity field.

Launched in 2009, GOCE's state-of-the-art gradiometer is mapping Earth's geoid to an unprecedented level of accuracy, opening a window into Earth's interior structure as well as the currents circulating within the depths of its oceans.

(<https://earth.esa.int/web/guest/missions/esa-operational-eo-missions/goce>)

GODAE = Global Ocean Data Assimilation Experiment

(<http://www.godae.org/index.htm>)

HAM = Hydrospheric Angular Momentum

ISSI = International Space Science Institute - Bern/Beijing

ISSI Bern (<http://www.issibern.ch>)

ISSI China (<http://www.issibj.ac.cn>)

LOD = Length Of the Day

NASA = National Aeronautics and Space Administration

NOAA = National Oceanic and Atmospheric Administration

OAM = Ocean Angular Momentum ($10^{24} \text{ kg m}^2/\text{s}$)

Ocean Angular Momentum are three-dimensional vectors. We call the three components (OAM_x, OAM_y, OAM_z). The OAM_z component represents the momentum relative to the earth's rotation axis, it is linked to the Length-of-the-Day. The other two components (OAM_x, OAM_y) are relative to two axes contained in the equatorial plane and are linked to the earth's wobbles. When a planetary error like a typo introduced in the code of tidal correction of the altimetric TPJ dataset occurs for one OAM component, it occurs on the other two as well.

OBP = Ocean Bottom Pressure

OGCM = Ocean General Circulation Model

TPJ = TOPEX/Poseidon/Jason

Satellite mission series initially launched by NASA-CNES partnership in 1992 with the TOPEX and the Poseidon altimeters (TOPEX/Poseidon) on-board to monitor sea level variations. NOAA and EUMETSAT joined the NASA-CNES altimetric missions by launching the Jason satellite series with overlapping periods for TOPEX/Poseidon and Jason1 missions and for the subsequent Jason missions. Jason 1 was launched in 2001, Jason 2 in 2008. The next TPJ-like altimetric satellite to be launched with NOAA/Eumetsat is planned to overlap Jason 2 in 2014. Other altimetric missions launched by countries in addition to this TPJ partnership have been launched like the ERS series initially launched by ESA in 1991. Since 2008, all altimetric missions contribute to monitor the changes of sea level and benefit from the excellent accuracy of the TPJ missions at the planetary scale for their Precise Orbit Determination. All altimetric missions contribute to monitor the changes of the Ocean Surface Topography (OST), and starting 2010, the TPJ-like satellite mission planned to overlap Jason 2 are called OSTM including Jason 2.