The Jason-1 radar altimetry mission was designed to resolve changes in global mean sea level to provide for studies of interannual sea level change. We have conducted an evaluation of the Jason-1 measurements to determine their readiness for continuing the 10-year series of sea level change measurements compiled by the TOPEX/Poseidon (T/P) mission. During the calibration/validation phase of the mission (15 January 2002 — 15 August 2002) Jason-1 followed TOPEX/Poseidon along the same repeating ground track, tracking by about 72 seconds.

Preliminary evaluation of sea level change measurements made during the coincident 21 cycles show that the interim data from Jason-1 is of nearly the same quality as T/P, and there is every reason to expect that the final data will be of the same quality or better. Several data analysis issues have become clear, including the necessity to revisit the calibration of TOPEX side B before evaluating the cross-calibration of T/P and Jason-1.

We have completed detailed comparisons of T/P and Jason-1 sea level measurements, including each of the measurement corrections using the latest instrument and geophysical corrections, including ITG2000 orbits, and new radiometer and sea-state bias models. We have determined the relative bias and the residual differences between Jason-1 and T/P and compared the results to the individual tide gauge calibration of each mission.

We have evaluated the global mean differences of T/P and Jason-1, and the dry troposphere correction path delays from calibrated JMR brightness temperatures. Brown, Ruf, and Keihm have suggested yaw-dependent corrections to the ... yaw) and +1.4 mm (fixed yaw). We have evaluated the effect of both of these corrections on mean sea level estimates.

We have evaluated the global mean differences of T/P and Jason-1 and have corrections. As expected, the dry troposphere path delay has essentially no difference. The dual-frequency ionosphere delay has bias ~4 mm and a rms difference < 1 mm.

We have evaluated the global mean differences of T/P and Jason-1 and have used the GSFC ITRF2000 orbits and interpolating software.