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GOCE Precise Science Orbits

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ESA's first Earth Explorer Core Mission GOCE is equipped with a 12-channel, dual-frequency GPS receiver for precise orbit determination, instrument time-tagging, and the determination of the long wavelength part of the Earth's gravity field. A precise science orbit (PSO) product with 2-cm accuracy is provided by the GOCE High-level Processing Facility (HPF) with a latency of 1-week for final analyses.

We present the reduced-dynamic and kinematic PSO results obtained from almost two years of operations. Internal orbit comparisons and external validations with independent Satellite Laser Ranging (SLR) measurements demonstrate that the PSO product fully meets the mission requirements.