Let’s talk about sea level rise

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Abstract

Sea Level Rise and Satellite Altimetry

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Sea level is rising—and accelerating—posing increasing risks to coastal populations and ecosystems. Since 1993, global sea level has risen by approximately 10 cm, at an average rate of 3.4 mm/year, with clear acceleration in recent years.

This rise is driven by ocean warming (thermal expansion), melting glaciers and ice sheets, and changes in land water storage.

Satellite altimetry allows us to monitor sea surface height globally and repeatedly, offering insights that tide gauges alone cannot provide. These measurements are vital for understanding climate trends, modelling future scenarios, and informing adaptation strategies.

With over **30 years of continuous data** from operational missions like TOPEX/Poséidon, Jason 1&2, and Sentinel-6, altimetry provides a stable and consistent climate record.

Copernicus, with partners including CLS, CNES, ESA, and EUMETSAT, plays a central role by ensuring the availability of free, high-quality, and sustained data.

Altimetry data is used by major climate actors—from the **IPCC and UN to national governments**—to support coastal planning and resilience.

Ultimately, we are **turning satellite data into actionable ocean knowledge**, ensuring we are not only aware of sea level rise, but prepared for its consequences.