



CHANGES IN LAND & SEA LEVELS ALONG THE THAMES ESTUARY & RIVER THAMES, UK

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Changes in land & sea levels along the Thames Estuary & River Thames

- "Absolute fixing of tide gauge benchmarks and land levels: Measuring changes in land and sea levels around the coast of Great Britain and along the Thames Estuary and River Thames"
 - *Joint UK Defra/EA flood and coastal erosion risk management R&D programme and the EA Thames Estuary 2100 studies*
- Combination of **Persistent Scatterer Interferometry (PSI)**, **Global Positioning System (GPS)**, **Absolute Gravimetry (AG)**, **tide gauges** and **geoscience** to assess the combined impact of sea level rise and ground stability on flood risk



- *950,000 Persistent Scatterers revealing millimetric ground and structure motion trends between 1997 and 2005*
- *Successful integration of complementary monitoring techniques (PSI, GPS and AG) to detect vertical land movements on the scale of millimetres per year, and in a stable reference*
- *Suggests sea level rise of 1.8 to 3.3 mm/year with respect to the land along the Thames Estuary and River Thames*
- *PSI provides large spatial coverage, unique for providing regional scale refinement. Correlation between PSI motion deep geological features, domains or domain boundaries*

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