# ESA STSE WaterRadiance Project

Project is lead by GKSS (Project Manager Rüdiger Röttgers)
with FUB, BC and ARGANS
(supported by University of Strathclyde and Bio-optica Ltd)

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# WaterRadiance Project Overview

- Literature Review (Task 1a)

- Scientific Analysis Plan (Task 1b)

- Development of a water optical properties model (Task 2)
    - includes measurements of pure water

- Development of a water-leaving radiance model in the UV to SWIR spectral range (Task 3) - MOMO (Matrix Operator Model)
    - addition of Raman scattering and polarization plus full range (UV to SWIR)

- Sensitivity analysis (Task 4)
    - Impact of uncertainties related to pure water inherent optical properties on water leaving radiances
    - UV spectral region (300 – 400 nm) / S-3 400 nm band
    - NIR/SWIR spectral range including temperature and salinity effect

- Development of retrieval algorithms of IOPs (Task 5)
    - GKSS Neural Network & GIOP approach

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# Link to GIOP (mainly within WaterRadiance Phase 2)

- Determine a version or versions optimised for the MERIS and Sentinel-3 bands
- Determine and implement a method for creating product error bars
- Identify the shortcomings of the retrieval algorithm and clearly define the observational conditions in which it is applicable

- Deliverable: MERIS & Sentinel-3 ATBD inputs

- GIOP is an evolving project and the intention is to provide a platform for prototyping and testing.

- Therefore, a pragmatic approach is to develop a bridge from BEAM to the C-coded GIOP processor.

- Deliverables: Contribution to MERIS and Sentinel-3 Retrieval Algorithm Validation & Scientific Roadmap docs

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