Study of Oil Pollution, Land-Based Pollution, Phytoplankton and Macro- Algal Blooms, and Coral Reef Degradation in the China Seas (OPAC)

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This project has four objectives: Detection of 1) anthropogenic pollution of the sea, like oil pollution and land-based pollution, 2) phytoplankton blooms, and 3) macro-algal blooms in the Chinese Seas using space-borne synthetic aperture and optical/infrared images, and 4) monitoring the degradation of coral reefs in the South China Sea.

It is of great societal relevance since it addresses issues concerning the pollution of the sea that threatens marine life and affects acqua-farming (e.g., by harmful algae blooms) and fishery in the Chinese waters, and it addresses the status of coral reefs, which provide many vital ecosystem services.

It is innovative since its objective is to investigate under what conditions SAR can be used to monitor enhanced (and sometimes harmful) biological activity in the ocean. This requires a close cooperation of remote sensing scientists working with SAR and optical/infrared sensors. Furthermore, concerning the investigation of coral reefs, it is innovative, since it will use multi-sensor data to analyse the long-term evolution of coral reefs and the physical stresses causing their degradation.

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SAR