

Adriatic Sea primary production (Application of Sea-Wifs to a variable primary production system)

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The Northern Adriatic, due to marked eutrophication gradients over a relatively small area, represents a suitable experimental polygon for testing new methods to estimate and monitor primary production. Even if chlorophyll contents in surface water could be inferred from Sea-WIFS, the ultimate long-term goal of the program is to obtain basin-wide estimate of primary production and to assess its fate.

In the years 1978-1986 the spaceborne Coastal Zone Color Scanner (CZCS) made an important contribution, by mapping phytoplankton concentration in the Adriatic Sea. During the same time period numerous series of experimental cruises were carried out in several marine laboratories on the Adriatic coast. The observations, however, were not generally coordinated with the Nimbus transit.

In response to the NASA NRA request for a proposal, a consortium has been formed. It is made up of experts who, in the past, have independently dealt with optical, biological, chemical and physical parameters. They will now carry out a team work for an integrated study of space observations and *in situ* measurements. Details are given below.

The consortium is formed by:

- **Marine Biology Laboratory represents** Osservatorio dell'Alto Adriatico (OAA), and that is formed by: Marine Biology Laboratory (LBM), The International Centre for Theoretical and Applied Ecology (CETA), Institute of Sea Biology - National Research Council (CNR), Marine Biological Station Piran, "The Rudjer Boskovic Institute" Center for Marine Research in Rovinj.

- **Consorzio Ricerche Interdipartimentali di Scienze del Mare (CRISM)**

- the **University of Bologna** (Departments of Physics and Computer Science)

- the **Agusta Systems Company**

- the **Telespazio Company**

In particular, four units of the **Osservatorio Alto Adriatico (OAA)** formed by; **Marine Biology Laboratory (LBM)** Trieste, Italy; Institute of Sea Biology - National Research Council (CNR), Venezia, Italy; **Marine Biological Station**, Piran, Slovenia; "**The Rudjer Boskovic Institute**" **Center for Marine Research**, Rovinj, Croatia; and **Consorzio Ricerche Interdipartimentali di Scienze del Mare (CRISM)**, Bologna, Italy, will be involved in the "Sea-truth" activities. The **Departments of Physics and Computer Science of the University of Bologna**, Bologna, Italy, will develop the bio-optical algorithms. **Telespazio**, Roma, Italy, will be mainly involved in the image processing activities and in providing all the software tools necessary to support this activity. **Agusta Sistemi**, Tradate (VA), Italy will be mainly involved in taking aerial measurement using a Lidar and, if necessary, other airborne instruments. The research project aims at establishing reliable bio-optical algorithms for chlorophyll, suspended and dissolved organic matter based on Sea-WIFS data at estimating primary production of the Adriatic Sea. The Consortium intends to ask the needed endorsement from the Italian Space Agency and the High Authority of the Adriatic Sea.

The following persons have participated at the project:

- S. GHELFO (Technical responsible) (1);
- A. BRAMBATI (Project manager) (2);
- S. FONDA UMANI (Scientific responsible) (2);
- M. CABRINI (Scientific collaborator) (2);
- P. FRANCO (Scientific collaborator) (3);
- E. FEOLI (Scientific collaborator) (4);
- A. BERTOLUZZA (Scientific responsible) (5);
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- A. MALEJ (Scientific collaborator) (8);
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