

Preface

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Climate is the result of complex interactions between the planet's system components: the solid surface of the earth, the atmosphere, the ocean and the earth's interior. This perspective necessitates a multidisciplinary approach, a concept advanced by the Italian project 'Seasonal, Interannual and decadal variability of the Atmosphere, ocean and marine ecosystems' (SINAPSI), conducted from the beginning of 2001 to the end of 2004.

The major goals of SINAPSI were to: (1) foster climate research of major earth-climate subsystems, such as the atmosphere, the oceans and marine ecosystems, and (2) develop interdisciplinary methodologies for the study of climate variability at seasonal, interannual and decadal time scales, both in past and present climate regimes. To these ends, SINAPSI brought together a large group of scientists from a range of disciplines in order to discuss relevant interdisciplinary issues, rationalize long-term data series and construct new datasets.

SINAPSI was divided into 4 research areas: (1) observation and modeling of the global climate system; (2) climate variability in the Mediterranean region; (3) climate impacts on Mediterranean Sea ecosystems; (4) climate variability of past climate regimes.

SINAPSI has increased our capacity to model climate fluctuations of the atmosphere, oceans and marine ecosystems at seasonal, interannual and decadal time scales. Furthermore, at the scale of the Mediterranean region, several physical and biochemical climate signals were identified and studied. This is documented in this Climate Research Special.

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