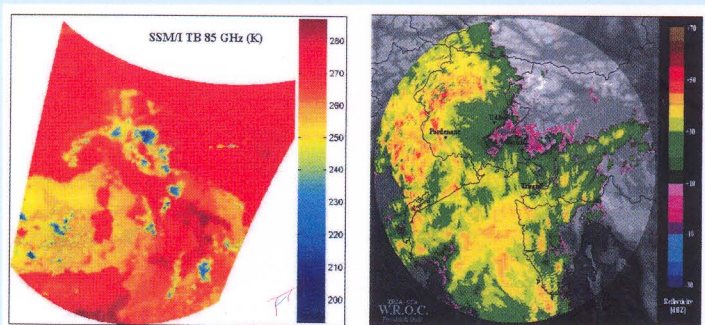
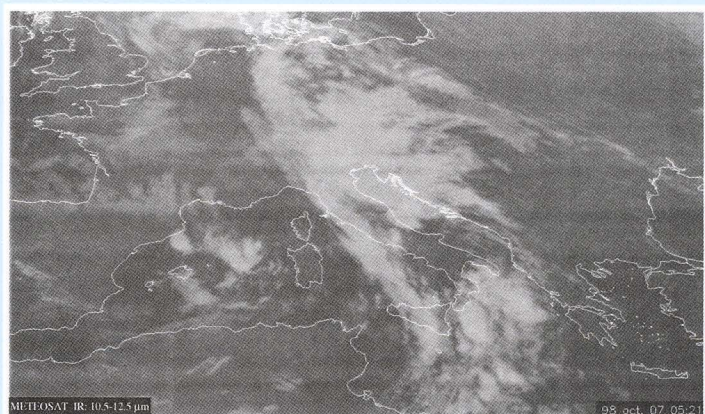


Mediterranean Storms



2nd Plinius Conference 2000

Edited by
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PREFACE

This book contains the proceedings of the 2nd *European Geophysical Society (EGS) Plinius Conference on Mediterranean Storms*, held in Siena, Italy, on 16-18 October 2000.

The Plinius Conference Series includes topical conferences and special workshops focusing on the study of the extremes of natural phenomena. Organized in the framework of the activities of the EGS Interdisciplinary Working Group on Natural Hazards (IWG-NH), the Plinius Conferences provide a unique forum for in-depth, multidisciplinary discussions on the scientific aspects of natural hazards.

The objective of the 2nd Conference was to provide an interdisciplinary forum for discussion of the present state of knowledge of storms in the Mediterranean environment, in relationship to coupled meteorological-hydrological processes and ground effects, with particular emphasis on damaging floods and landslides. The main focus of the conference was on a better understanding of the physical phenomena associated with heavy, rain-producing Mediterranean storms, their variability in space and time, their predictability and the concomitant land responses. In this context, the Conference was organized into the following three sessions: (1) *Physics and Forecasting of Heavy Rain Producing Storms*; (2) *Hydrological Processes in Flood Forecasting and Prediction*; and (3) *Extreme Rainfall Events: Mapping Ground Effects and Determining Landslide Initiation Thresholds*. This book, which contains 39 papers that have been derived from the 46 presentations that were given at the Conference (38 oral and 8 poster), is organized so as to reflect the content of these three main sessions. The Conference itself was attended by more than 60 scientists from eight countries (Germany, Greece, Italy, Spain, Switzerland, The Netherlands, United Kingdom and the United States).

When organizing the Conference, we expected that the presentations and interactions of scientists from various traditional disciplines, including meteorology, hydrology and geology, would not only improve our understanding of extreme rain events in the Mediterranean area and of their ground effects, but would also stimulate improved monitoring and forecasting techniques as well as strategies for disaster mitigation. In our opinion, the meeting took a successful step in achieving these objectives, which is the main reason why we decided to publish this book.

The scientific importance of and practical interest in these topics were dramatically brought to our attention during the Conference when a severe storm hit the northwestern part of Italy causing extensive flooding and numerous landslides. The Piemonte-2000 floods resulted in 2 casualties and economic damages exceeding € 5000 million. Noteworthy, the casualty count was approximately 50 times lower than a similar hazardous storm system in the Piemonte region that took place in 1994, killing approximately 90 people. In part, the decrease in casualties during the year 2000 was brought about due to the gain in knowledge and the improvement in forecasting skills that have emanated from the scientific interest group that helped create and sustain the EGS Plinius Conference series on Mediterranean storms. Readers should note that several papers describing the storm system producing the Piemonte-2000 floods were presented at the 3rd Plinius Conference, held in Baja Sardinia, Italy, during October 2001.

We wish to thank the authors of this book for their contributions and for their

assistance in helping retain a historical record of the scientific knowledge that this conference stimulated, and all of the attendees of the Conference for their participation in stimulating discussion and debate concerning the conference topics. We also wish to express our gratitude to the European Geophysical Society as well as to the other sponsoring institutions for their generous support in organizing and convening the meeting. In this context, we acknowledge that the Conference was co-organized by a group of research centers active in the field of natural hazards evaluation and prediction – the *Istituto di Fisica dell'Atmosfera* (IFA) and the *Istituto di Ricerca per la Protezione Idrogeologica* (IRPI) of the Italian *Consiglio Nazionale delle Ricerche* (CNR); the *Centro di Ricerca Interuniversitario in Monitoraggio Ambientale* (CIMA) of the *Università di Genova e della Basilicata*; and the *Laboratorio per la Meteorologia e la Modellistica Ambientale* (LaMMA) of the Toscana Region –, while it was co-sponsored by CNR, the CNR's Italian *Gruppo Nazionale per la Difesa dalle Catastrofi Idrogeologiche* (GNDCI), the *Fondazione per la Meteorologia Applicata* (FMA) of Florence, the Siena City Council, and the *Monte dei Paschi di Siena* Bank. This book has been published with the financial support of CNR-GNDCI to whom we are indebted.

We wish to thank Mr. Alfredo Pappadà and the staff of the Garden Hotel of Siena for having provided an ideal environment for the Conference.

Finally, we wish to express our deepest gratitude to the members of the Scientific and Organizing Committees for their vital contributions in preparing the scientific program and organizing the workshop. We are particularly grateful to Prof. Maria del Carmen Llasat for her essential role as Chairperson of the EGS IWG-NH, and we appreciate the dedicated efforts of Mrs. Emilia Michini, Secretary of the CNR-IFA Institute, for a successful meeting. Mrs. Michini, Ms. Luisella Colla and Mr. Stefano Nanni were in charge of the local secretarial and technical support activities and provided continuous and tireless support to all of the participants. Several authors also served as reviewers of the manuscripts. Their efforts and the editorial assistance of Mr. Nanni and Mr. Carlo Fastelli helped make possible the publication of these Proceedings.

The editors