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Satellite Technology and GIS for Mediterranean forest mapping and fire management

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FOREWORD

An international workshop on "Satellite Technology and GIS for Mediterranean forest mapping and fire management" was held in Thessaloniki, Greece, in November 1993. It was jointly organised by EARSeL, the Aristotelian University of Thessaloniki and the Joint Research Centre, European Commission, Ispra, Italy.

The papers published here have been chosen from the 42 presented at the workshop, because we felt they would best represent the variety of problems, and describe the solutions and expectations arising from the use of satellite imagery and spatial data bases to tackle the issues of forest mapping and fire-fighting in the Mediterranean area of Europe.

More than half the papers are devoted to fire-fighting; from fire risk rating to fire detection, fuel mapping, fire growth simulation, assessment of fire damages, and, finally, the study of post-fire vegetation regeneration. It can be seen that an emerging field of investigation and application is the use of dynamic spatial data bases for fire behaviour modelling and prediction.

The importance given to forest fires is not surprising in a Mediterranean environment, but the issue of forest and Mediterranean vegetation mapping is also well illustrated. As multitemporal (multiseasonal) use of satellite data is often mandatory in order to reach an appropriate level of discrimination, the requirement of radiometric calibration – also considering the influence of relief – is illustrated. Change detection and mapping, as a cheaper alternative to exhaustive mapping, is also documented and discussed and we thought that an example from Finland was justified as a contribution to implementing the method.

Advances in Remote Sensing, which is the criterion of this journal, points – also within our subject – to new workable methods of automatic classification and new improved sensors, hopefully to become available in the near future. Two contributions are therefore included on these topics.

Finally, if we consider the frequent use of multiresolution data in large forest monitoring actions, a crucial question arises (which, by the way, is central to the whole remote sensing field): what do we map – i.e. what do we measure – at varying resolutions, what is the magnitude of the error we will encounter and how is it linked with the nomenclature we want to use? It appeared highly appropriate to us to discuss this issue also.

All the contributions originate from the Thessaloniki Workshop, as specified above, so special acknowledgement is due to Prof. Michael Karteris and his colleagues in the Department of Forestry and Natural Environment and the Department of Agriculture at the Aristotelian University, Thessaloniki, who hosted the event, and to Mrs Madeleine Godefroy, EARSeL, Paris, who organised this publication.

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