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SAR Workshop

CEOS Committee on Earth Observation Satellites Working Group on Calibration and Validation

Toulouse, France
26 - 29 October 1999

European Space Agency
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CENTRE NATIONAL D'ETUDES SPATIALES

CEOS
Committee on Earth Observation Satellites

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and
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CENTRE NATIONAL D'ETUDES SPATIALES

Committee on Earth Observation Satellites

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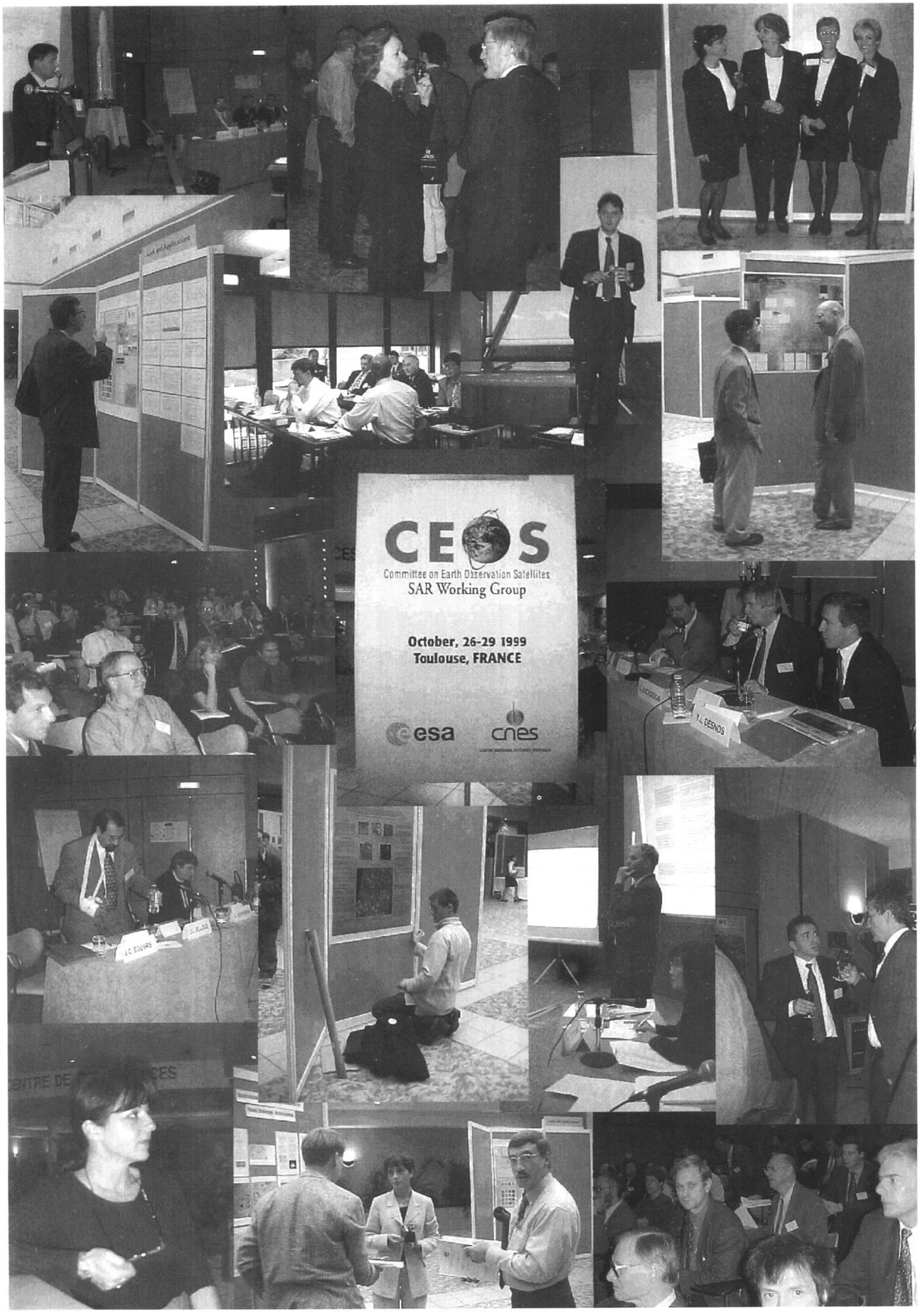
CEOS
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Foreword

In the framework of the *Committee on Earth Observation Satellites* (CEOS) Working Group on Calibration and Validation, a SAR Workshop jointly organised by ESA and CNES was held at the ATRIA Mercure hotel, in Toulouse from 26th to 29th October 1999. The meeting was hosted by the Radar Systems Department of CNES "Centre Spatial de Toulouse".

The workshop, attended by 180 participants (17 countries were represented) was organised in the form of plenary sessions allowing 20 minutes for presentations and 5 minutes for questions. For the first time, a poster session was also organised. The programme content and preparation was supported by an International Technical committee composed of 36 experts representing the various disciplines.

A web site was also prepared for the workshop and papers are available on-line at URL:

http://www.estec.esa.nl/CONFANNOUN/99b02.

120 presentations (65 orals and 55 posters) were given during the CEOS'99 meeting

Each workshop session was followed by a round table in order to allow further discussions on '*seed questions*' prepared by the session chairmen and rapporteurs, and on specific issues raised during the presentations. On the last day of the workshop, a session was organised to summarise the different sessions of the workshop and to draft recommendations for the CEOS WGCV.

This volume brings together the results presented at the workshop in the full length papers, the seed questions prepared for the round tables, the summary reports of the 8 sessions and finally the recommendations brought up to the CEOS WGCV. A synthesis of the discussions related to suggestions on the workshop format can be also be found at the end of the proceedings.

The CEOS SAR workshop was more than ever the forum for interchange at the highest level of the SAR Systems Engineering field. We were able to discuss in depth key technical problems and to help to better define future SAR instruments and their performances. These discussions confirmed that various technical issues remain to be solved and the SAR subgroup will continue to meet every year in order to address them. As a measure of the success of this workshop, three space agencies have already proposed to host the next meeting : NASDA (Japan), DLR (Germany) and CSA (Canada).

We would like to take this opportunity to thank all attendees for their effort in attending, presenting and contributing to the workshop. We should also thank also the organising committee, the scientific committee, the session chairmen and rapporteurs and the staff from the CNES and ESA conference bureaus who contributed to the success of this event. We look forward to seeing all of you at the next CEOS SAR workshop.

Yves-Louis Desnos (Chair CEOS SAR Subgroup)

Jean-Claude Souyris (Workshop Local Organiser)

Introduction

S. Briggs, Head Earth Observation Applications Department (ESA/ESRIN)
J-L. Fellous, Earth Science and Applications, CNES Programme Directorate

International collaboration on calibration and validation through the Cal/Val Working Group has been one of the signal successes of the CEOS organisation. The Working Group has created a mechanism for the sharing of effort in CAL/VAL between cooperating agencies, for the management of coherent programmes and campaigns and for the pooling of engineering and scientific information about the process of Earth observation through a variety of techniques. The success of the meeting of the SAR subgroup reported here is further evidence of the success of the coordinated approach adopted through CEOS.

The location of the meeting in Toulouse is also evidence of the interest and historical support for SAR work in Europe. SAR was central to the mission of the first two ESA EO satellites, ERS-1 and ERS-2, and the Advanced SAR (ASAR) on board ENVISAT will be a further step forward in technology and in the exploitation of SAR data. In addition, there have been significant European contributions to joint missions with NASA, culminating in the recent marvellously successful SRTM topographic mapping mission, developing interferometric techniques first demonstrated in space with the ERS missions. Recent developments in differential interferometry reported here are particularly exciting and are leading both to a better understanding of the geophysics of the Earth's crust and, of immediate practical benefit, to methods of monitoring and even perhaps predicting surface deformations caused by natural disasters such as earthquakes and landslides, as well as anthropogenic subsidence. Coherence mapping is also showing very encouraging results in other aspects of disaster monitoring.

The volume of business at this meeting shows the world-wide interest in SAR Cal/Val. Over 180 participants attended from 17 countries, with over 120 papers being presented. A particularly important and useful contribution came from the Round Table sessions, where the practical details of cooperative programmes and campaigns were discussed. Over 10 hours of Round Table talks were held during the course of the meeting.

Conclusions of the workshop will be presented to the next WGCV Plenary meeting in India and formal recommendations made to the CEOS Plenary in Sao Paulo in late 2000, for implementation through member space agencies.

We are very pleased that ESA has agreed to publish the proceedings as a volume in the ESA Special Publication Series; this will ensure that the workshop will have the widest possible impact.

We would like to congratulate the organisers on the outstanding success of the workshop and the quality of the subsequent publication.

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