



Course on  
"Inverse Methods in Atmospheric Science"  
1 – 12 October 2001  
Miramare, Trieste, Italy

The Abdus Salam International Centre for Theoretical Physics (ICTP) is organizing a Course on "Inverse Methods in Atmospheric Science", to be held from 1 to 12 October 2001, in Trieste, Italy. The directors for this activity will be Didier Fussen (Institut d'Aéronomie Spatiale de Belgique, Brussels, Belgium), Rodolfo Guzzi (Agenzia per lo Sviluppo della Tecnologia per l'Emilia-Romagna [ASTER], Bologna, Italy) and Clive Rodgers (Oxford University, United Kingdom). The local organizer will be Giuseppe Furlan (University of Trieste and ICTP).

The Course will be co-sponsored by the Italian Space Agency (ASI, Rome) and the European Space Agency (ESA, Paris), to favour the participation of young scientists.

The activity will consist of the following:

- **General Topics**
  - General inverse methods
  - Information content & error analysis
  - Constraint optimization inversion
  - Numerical methods for non linear problems
  - Numerical methods for the forward model
- **Application**
  - Occultation
  - Nadir & limb view in different spectral regions
  - Ground station measurements
  - Aerosol size distribution
  - Assimilation
  - Spectral channel optimization
- **Computer Exercises**
  - Computer sessions will be an important component of the course.

Inverse methods in atmospheric sounding are among the challenges of the new millennium. This methodology offers the possibility of obtaining a tridimensional view of the atmosphere, useful to understanding the processes of transport, diffusion and transformation of atmospheric components. At present, there is no theory that unifies direct and inverse methods, only sparse techniques. The Course will, therefore, present the state-of-the-art based on the most advanced methodologies. Computer sessions will be an important component of the course.

The Course will be given at a graduate and postgraduate level intended for M.Sc and PhD researchers working in the field of Remote Sensing. It will offer researchers the possibility of strengthening their theoretical background in the physical mechanisms of Atmospheric Remote Sensing and related measurements.

The activity is open to scientists from all member countries of the United Nations, UNESCO or IAEA. Although the main purpose of the Abdus Salam ICTP is to help researchers from developing countries through a programme based on international co-operation, students and post-doctoral scientists from developed countries are also welcome to attend. The activity will be conducted in English.

Limited funding (including travel grants) for participation in the Course is available, mostly for applicants from developing countries. It is stressed that participants whose travel expenses are paid for by the Abdus Salam ICTP are required to attend the entire activity. No registration fee is required to attend this activity.

The deadline for submitting requests for participation is 30 June 2001.

The "Request for Participation" form, to be found at the back of the Bulletin (also obtainable via e-mail: [smr1332@ictp.trieste.it](mailto:smr1332@ictp.trieste.it), and by typing on the subject line "get announcement" or via the WWW:<http://www.ictp.trieste.it/>) should be completed, signed and mailed to:

the Abdus Salam International Centre for Theoretical Physics  
Course on "Inverse Methods in Atmospheric Science"  
Attn.: Ms Lisa Iannitti  
Strada Costiera 11  
34014 Trieste, Italy

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#### Request for Participation

To be sent to: the Abdus Salam ICTP  
Course on "Inverse Methods in Atmospheric Science"  
Attn.: Lisa Iannitti  
Strada Costiera 11  
34100 Trieste, Italy

Course on "Inverse Methods in Atmospheric Science"  
1 – 12 October 2001  
Miramare, Trieste, Italy

Please attach a recent photograph to this form

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SURNAME/FAMILY Name: MAIDEN Name: First name: Middle name(s): Sex:  
For women only (if applicable)

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IMPORTANT: PLEASE ALSO COMPLETE THIS SECTION, IF YOUR NAME(S) ON YOUR PASSPORT ARE SPELT DIFFERENTLY FROM THE ABOVE.

SURNAME/FAMILY Name: MAIDEN Name: First name: Middle name(s):  
For women only (if applicable)

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Place of birth (City and Country): Present nationality: Date of birth:  
Year – Month – Day

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Full address of permanent Institution: Institute: Tel. No.  
Telex/Cable  
Telefax  
Your Office: Tel. No.  
Telefax  
E-mail: \*

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Full address of present Institution (if different from permanent): Institute:

Tel.  
No.  
Telex/Cable  
Telefax

Your  
Office:  
Tel.  
No.  
Telefax:

until: Date ..... E-mail: \*

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\*) I agree that my e-mail address(es) be made public on the ICTP WWW page: YES \_\_ NO \_\_

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Mailing address – please indicate whether: Permanent \_\_ Present \_\_

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Education: Please attach a brief CV (max. 2 pages), including education and a list of your latest scientific publications.

- 1) Area of Research (keyword description – no more than 15 letters)  
2) Specific Field of Interest (keyword description – no more than 30 letters):

1) .....

2) .....

**APPLICABLE ONLY FOR CANDIDATES FROM DEVELOPING COUNTRIES** (Important: Please note that limited travel grants are available, and preference in selecting participants will be given to eligible candidates who can guarantee travel coverage by their own local sources).

Request for Financial Assistance: (please tick one only)

- (a) Full Travel + Subsistence q (c) Subsistence Only q  
(b) Half Travel + Subsistence q (d) No Funds Requested q

I certify that if granted funds for my travel, I will attend the whole activity:

Signature: \_\_\_\_\_ Date:  
\_\_\_\_\_