

## ABOUT THE SHORT COURSE

Recent advancements in data assimilation techniques have immensely helped in improving the model predictability, in general. There is a substantial improvement in the ability of land surface models, majorly due to advancements in the land data assimilation systems, especially in the last decade.

This two-day course will provide a glimpse of such advancements, focusing especially on the land surface models and assimilation techniques. The speakers will initiate an introduction to the basics of data assimilation, and introduction to land data assimilation in weather and climate models.

The course will also focus on the sources of uncertainty, characterization of uncertainty of model predictions, how data assimilation is essential for characterizing and reducing uncertainty and the feasibility of these in large scale high resolution model predictions.

For a better understanding of land data assimilation, the course will cover in detail the error characterizations, land surface models, satellite observation systems and ensemble kalman filter based land data assimilation system.

Participants will be able to comprehend different variational data assimilation approaches: the inverse problem, background error covariance matrix and optimal interpolation. Hands-on tutorials of data assimilation based on R programming, and CESM-CLM data assimilation will be arranged.

## COVERAGE

- Brief Basic Concepts of Data Assimilation
- Land Data Assimilation in Weather and Climate Models
- Uncertainty, Sources, Reduction and Error Characterizations
- Land Surface Model and Satellite Observation System
- Variational Data Assimilation Approaches
- Ensemble Kalman Filter
- Data Assimilation Research Testbed (DART)

## FACULTY

- Prof. Harrie-Jan Hendricks Franssen, Forschungszentrum Juelich, Germany
- Prof. Somnath Baidya Roy, Centre for Atmospheric Sciences, IIT Delhi.
- Prof. Indu J, Civil Engineering, IIT Bombay.
- Mr Aniket Chakravorty, Scientist C, North-Eastern Space Applications, Department of Space, Shillong.

## WHO MAY PARTICIPATE?

- Practicing water resources engineers, hydrologists, remote sensing experts - government and private.
- Faculty members of engineering colleges.
- Scientists and officers from government R&D organizations and ministries.
- Research scholars and post-graduate students.

## DATE AND VENUE

Date : 21-22 September 2017.  
Venue : Civil Engineering Department, IIT Delhi.

## FEES

Rs. 6,000/- (Rupees Ten Thousands Only) per participant (Inclusive of all taxes). The details of fee payment by Electronic Clearing Service/ RTGS in the name of "IITD CEP ACCOUNT":

Bank Name	State Bank of India
Branch Name & Address	IIT Delhi, Hauz Khas, New Delhi – 110016
IFS Code	SBIN0001077
MICR Code	110002156
Type of Account	Saving Account
Bank Account No.	36819334799
SWIFT Code	SBININBB547
IITD PAN No.	AAATI0393L

The fees cover printed course materials, along with local hospitality.  
Last date for registration: 20<sup>th</sup> July, 2017.

## ACCOMMODATION

This is a non-residential program. The participants are expected to make their own arrangements for stay. Subject to availability, the organizers will try to book accommodation on payment basis within the Guest Houses of IIT Delhi, if requested sufficiently in advance through the Registration Form.

**REGISTRATION FORM**

**Short Course  
on  
ADVANCES IN DATA ASSIMILATION  
TECHNIQUES  
(21<sup>ST</sup>-22<sup>ND</sup> September 2017)**

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Organization: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

E-Mail: \_\_\_\_\_

Phone: \_\_\_\_\_

Mobile: \_\_\_\_\_

Fax: \_\_\_\_\_

Fees Payable to "IITD CEP ACCOUNT", SBI, IIT DELHI

Transaction No.: \_\_\_\_\_

Dated: \_\_\_\_\_

Bank Name: \_\_\_\_\_

Rs. \_\_\_\_\_

Signature of Applicant

For further information please contact:

**COORDINATOR**

**Prof. Dhanya C.T.**

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Hauz Khas, New Delhi – 110016  
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Fax: +91 (11) 2658 1117

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Web: <http://web.iitd.ac.in/~dhanya>

Please send your registrations  
(Registration form and a copy of the  
payment details) to:

**Prof. Dhanya C.T.**

E-Mail: [dhanya@civil.iitd.ac.in](mailto:dhanya@civil.iitd.ac.in);  
[dhanyact@gmail.com](mailto:dhanyact@gmail.com)

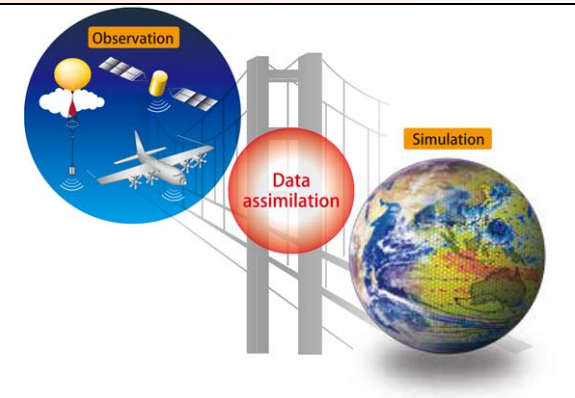
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**Short Course**

on

**ADVANCES IN DATA  
ASSIMILATION TECHNIQUES**

21<sup>ST</sup>- 22<sup>ND</sup> SEPTEMBER 2017



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Indian Institute of Technology Delhi  
Hauz Khas, New Delhi-110016 (INDIA)