

# ICTS-TIFR Discussion Meeting-2011

Indian Institute of Science, Bangalore

## PROGRAMME

12-16 December 2011

### Venue – Auditorium

Centre for Nanoscience and Engineering (CeNSE), IISc.

12 December 2011 – Monday	
08:30 -9:00 am	REGISTRATION
09:00 -11:00 am	<p><b>09-9:30 am</b> - <i>Welcome</i></p> <p>RAHUL PANDIT, JAYWANT H ARAKERI, URIEL FRISCH</p> <p>Overview of ICTS - H R KRISHNAMURTHY</p>
09:30 -10:15 am 10:15 -11:00 am	<p><i>Chair</i> - R Govindarajan, JNCASR Bangalore</p> <p><b>R Narasimha</b> JNCASR, Bangalore <b>Big computing for insight: The challenge of turbulent shear flows</b></p> <p><b>P K Yeung</b> Georgia Tech. USA <b>Petascale computing for studies of turbulent mixing and dispersion: current status and future prospectsm</b></p>
11:00-11:30 am	COFFEE
11:30 am – 12:15 pm	<p><i>Chair</i> - R Govindarajan, JNCASR Bangalore</p> <p><b>J Bec</b> Observatoire de la Côte d’Azur France <b>Direct numerical simulations of particles suspended in a turbulent flow</b></p>
12:15 - 01:30 pm	LUNCH
01:30 – 02:15 pm	<p><i>Chair</i> - K R Sreenivasan, NYU, USA</p> <p>DISCUSSION</p>
02:15 -04:00 pm	Free
04:00 – 05:00 pm Faculty Hall	<p>Subrahmanyam Chandrasekhar lecture by Uriel Frisch Observatoire de la Côte d’Azur, France</p>

## 13 December 2011 –Tuesday

09:00 -11:00 am	<i>Chair</i> : <i>Sriram Ramaswamy, IISc Bangalore</i>
09:00 -09:45 am	<b>K R Sreenivasan,</b> NY Univ., USA <b>Considerations on resolution requirements for three-dimensional turbulence</b>
09:45 -10:30 am	<b>J Schumacher</b> Technische Univ. Germany <b>Numerical challenges for supercomputations in dry and moist high-Rayleigh number convection</b>
10:30-11:00 am	COFFEE
11:00 – 11:45 am	<i>Chair</i> : <i>Sriram Ramaswamy, IISc Bangalore</i>  <b>M E Brachet</b> CNRS France <b>On new developments of the analyticity-strip method applied to the Taylor-Green vortex</b>
11:45 am – 12:30 pm	<b>J H Arakeri</b> IISc Bangalore <b>Flow structure and scaling laws in Rayleigh-Benard and in convection in tubes at high Rayleigh numbers</b>
12:30-2:00 pm	LUNCH
02:00 - 02:45 pm	<i>Chair</i> : <i>Rahul Pandit, IISc Bangalore</i>  <b>J van der Hoeven</b> CNRS France <b>Multi-precision computations and high performance: a delicate marriage</b>
02:45 – 03:30 pm	<b>S Chakrabarty</b> Niels Bohr Institute, Denmark <b>Higher precision versus higher Reynolds number: Case of Nelkin scaling in Burgulence</b>
03:30 – 4:00 pm	COFFEE
04:00 – 05:00 pm	<i>Chair</i> : <i>Uriel Frisch, OCA, Nice France</i>  DISCUSSION

**14 December 2011 –Wednesday**

**09:00 -11:00 am**

*Chair : Arnab Rai Choudhuri, IISc Bangalore*

09:00 -09:45 am

**A Pouquet**  
NCAR, USA

**Some issues in MHD turbulence**

09:45 - 10:30 am

**M Verma**  
IIT Kanpur

**Object-oriented Pseudo-spectral code TARANG  
for turbulence simulation**

**10:30-11:00 am**

**COFFEE**

11:00 – 11:45 am

*Chair : Arnab Rai Choudhuri, IISc Bangalore*

**G Sahoo**  
Max Planck Institute,  
Goettingen, Germany

**Systematics of the magnetic prandtl number  
dependence of MHD turbulence**

**11:45 am – 12:45 pm**

*Chair : P K Yeung, Georgia Tech. USA*

**DISCUSSION**

**12:45 pm -2:00 pm**

**LUNCH**

**FREE**

## 15 December 2011 –Thursday

09:00 -11:00 am	<i>Chair</i> : J Mathew, IISc Bangalore
09:00 -09:45 am	<b>K Itakura</b> JAMESTec. Japan <b>The architecture and the application performance of the Earth Simulator</b>
09:45 -10:30 am	<b>S Musacchio</b> Nice Sophia-Antipolis, France <b>Numerical simulations of turbulent fluid layers</b>
10:30-11:00 am	COFFEE
11:00 – 11:45 am	<i>Chair</i> : J Mathew, IISc Bangalore
11:45 am – 12:30 pm	<b>T Ishihara</b> Nagoya University <b>High-performance computing of canonical high- Reynolds-number turbulent flows</b>
	<b>P Perlekar</b> Technische Universiteit, Eindhoven <b>Discrete population dynamics in turbulence</b>
12:30-1:45 pm	LUNCH
01:45 – 02:30 pm	<i>Chair</i> : J Bec, OCA, Nice
02:30 – 03:15 pm	<b>Z-S She</b> Peking University, China <b>A mean-field theory working side-by-side with simulations</b>
	<b>S S Ray</b> Observatoire de la Côte d’Azur, France <b>A resonance phenomenon for the Galerkin-truncated Burgers and Euler equations</b>
03:15 – 4:00 pm	COFFEE
04:00- 5:30 pm	<i>Chair</i> : L Biferale Rome, Italy
	DISCUSSION

## 16 December 2011 – Friday

09:00 -11:00 am	<i>Chair</i> : V Krishan, Indian Institute of Astrophysics, Bangalore
09:00 - 09:45 am	<b>L Biferale</b> Rome, Italy <b>Studies of helicity in three-dimensional fluid turbulence</b>
09:45 -10:30 am	<b>P Sharma</b> IISc Bangalore <b>Role of Turbulence in Galaxy Clusters and Accretion Flows</b>
10:30 -11:00 am	COFFEE
11:00 am – 11:45 pm	<i>Chair</i> : V Krishan, Indian Institute of Astrophysics, Bangalore
	<b>R S Nanjundiah</b> IISc Bangalore <b>Turbulence in Climate Studies</b>
11:45 am - 12:30 pm	<b>D Mitra</b> NORDITA Sweden <b>Search for the solar dynamo in a computer</b>
12:30 -2:00 pm	LUNCH
02:00 – 02:45 pm	<i>Chair</i> : V Krishan, Indian Institute of Astrophysics, Bangalore
	<b>R Pandit</b> IISc Bangalore <b>Turbulent flows with polymer additives</b>
02:45 – 03:30 pm	COFFEE
03:30 – 5:00 pm	<i>Chair</i> : A Pouquet, NCAR, USA  DISCUSSION