Marie Curie Actions
Human resources and mobility

UniverseNet

Origin of the Universe: Seeking links between fundamental physics & cosmology

Coordinator's report
(Mid-term Review: 1 Oct 2006 - 30 Sep 2008)

Subir Sarkar

Contract: MRTN-CT-2006-035863

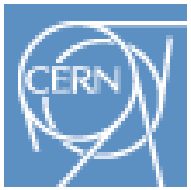
http://www.physics.ox.ac.uk/universenet/

38 institutions in 14 European (+ 1 Korean) national teams

John McDonald

Subir Sarkar

Nick Mavromatos



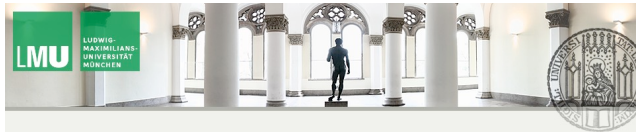
John Ellis

Mariano Quiros

Antonio Masiero

Kyriakos Tamvakis

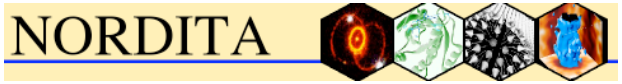
Pierre Binetruy



Slava Mukhanov

Julien Lesgourgues

Kari Enqvist



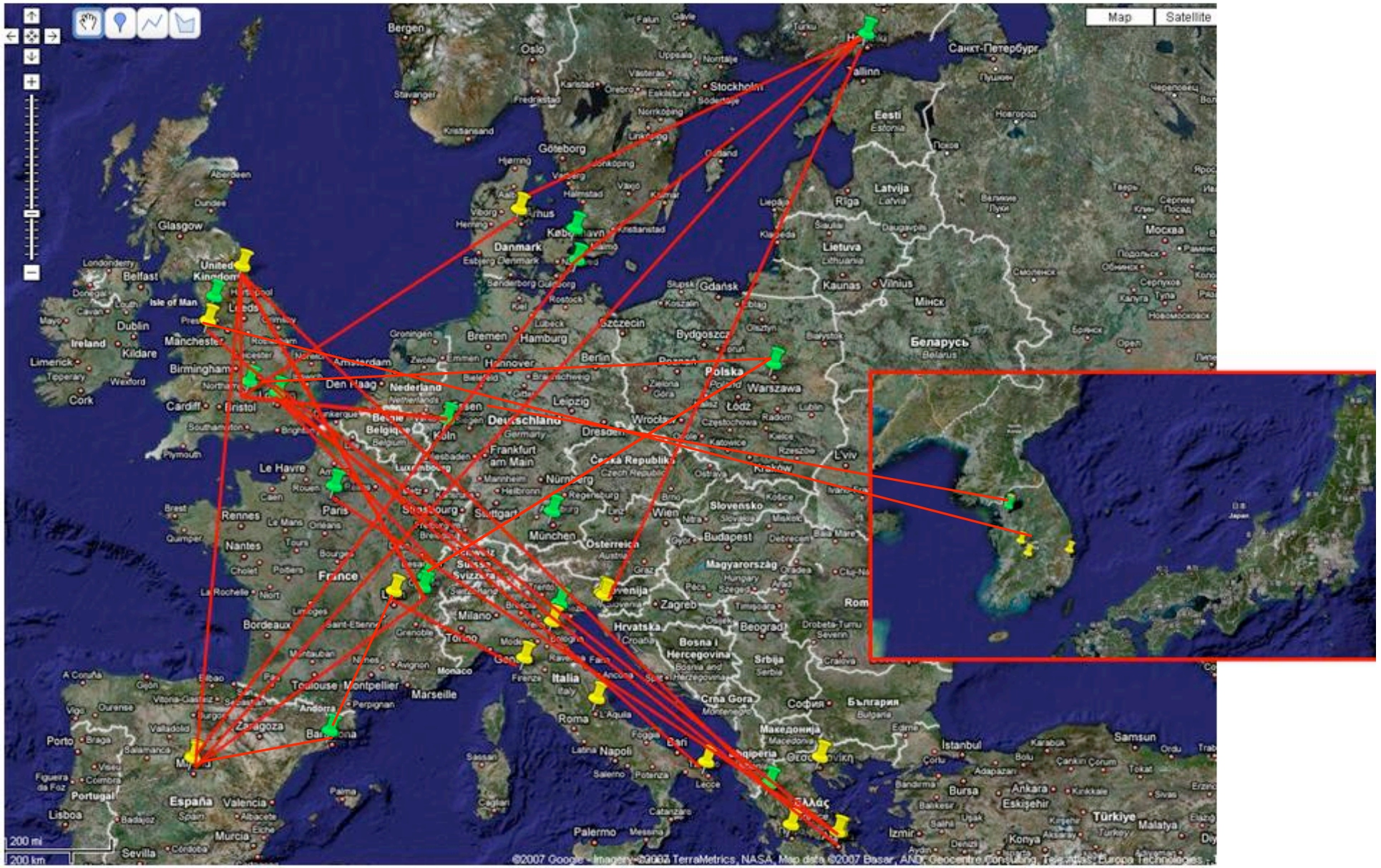
Anupam Mazumdar

Manuel Drees

Zygmunt Lalak

Jihn Kim

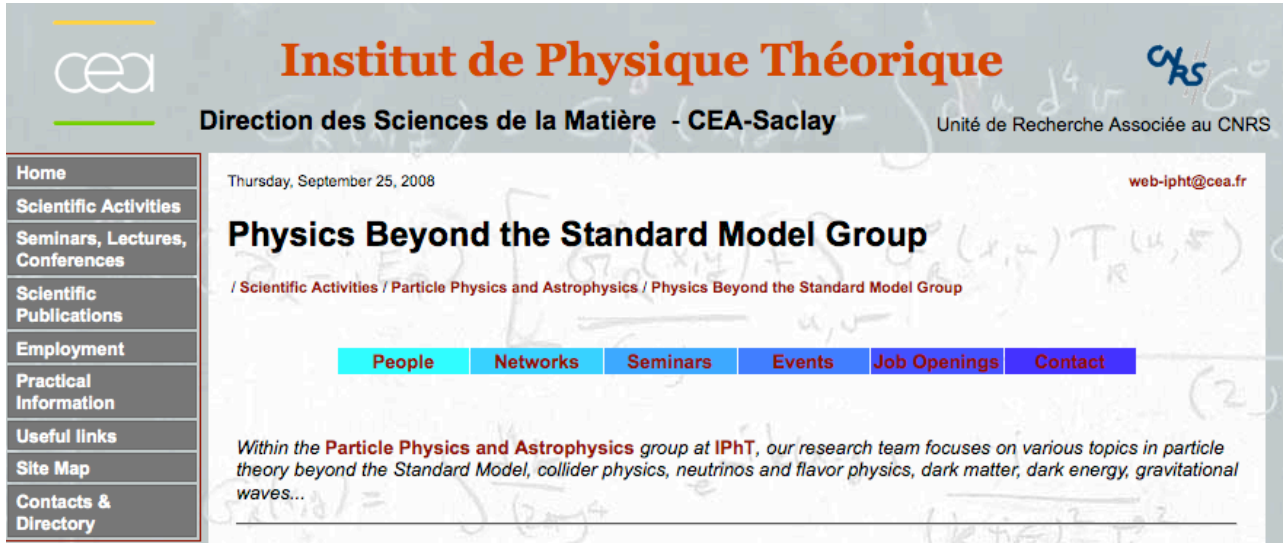
UniverseNet Partners and existing collaborations



Changes in Teams

NORDITA has moved to Stockholm so the Copenhagen node is now the **Niels Bohr Institute** (incl. DARK Cosmology Centre) - the Contract was modified and has been ratified by the Commission

The BSM theory group at CEA-Saclay (Brax, Cirelli, Servant, …) wish to join the network - they can be accomodated in the APC, Paris 'Extended Team' (no changes to budget or Contract necessary)



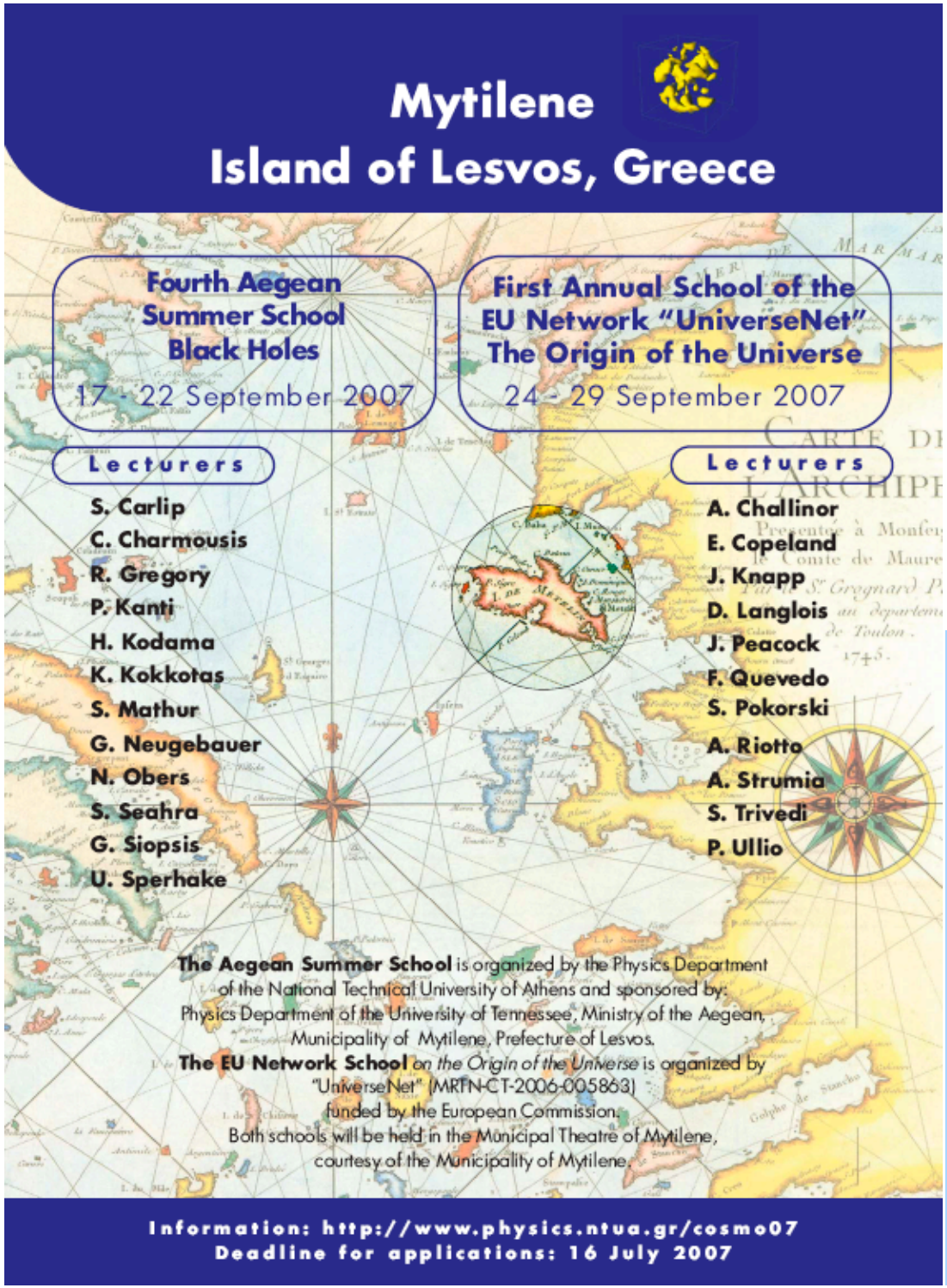
UniverseNet

The origin of our universe: Seeking links between fundamental physics and cosmology

This network brings together the major European (and Korean) theoretical physics groups investigating the fundamental physics which shaped our Universe. They have made important contributions across the whole spectrum of research in particle cosmology and astroparticle physics, from phenomenological issues concerning the genesis of matter and radiation, dark matter and dark energy, to fundamental questions about the nature of space-time and of the Big Bang itself. This is an opportune time for such studies, given both the explosion of observational results on the cosmological and astrophysical front, as well as the key tests of theories of new physics beyond the Standard Model which will be performed in forthcoming experiments within the lifetime of the network.

The key research tasks are to investigate:

1) the origin of baryons
2) the origin of dark matter
3) the origin of cosmic radiation
4) the origin of cosmic structure
5) the origin of dark energy
6) the origin of space-time



During 17-22 Sept 2007 we held the first training school with 160 participants (about half were from *outside* the network)

The lectures by leading experts covered both astrophysical and particle cosmology … there were also research presentations by students & postdocs

This week (22-26 Sept 2008) we held the second training school with 130 participants (again half were from *outside* the network)

Many thanks to the Lecturers and the students, the local organisers and, especially, our administrator Ana M!

What else has the network done in the past 2 years?

- **Performed collaborative research** on the key science objectives (126 inter-team papers in peer-reviewed journals and presentations at numerous international conferences) … reports to be given by 'Task coordinators'
- **Appointed young researchers** (9 *Early Stage Researchers* and 10 *Experienced Researchers*) in 13 of the Network Teams and provided them inter-disciplinary training
- **Organised *many* conferences, schools and workshops**
- **Established links with other networks/ToK activities**
- **Provided expert advice to EU-supported science coordination activities (ApPEC/ASPERA, Astronet, …)**
- **Outreach activities** (popular talks, articles, YouTube …)

Early Stage Researchers - ESR

Philipp Mertsch

Oxford University

Anna Kostouki

KCL

Wessel Valkenburg

LAPTH-ANNECY

Suchita Kulkarni

Bonn

Diana Battefeld

Helsinki

Photo Soon!

Lotta Mether

CERN

Nicholas Harries

CERN

Charalampos Bogdanos

Ioannis Ntalianis

Warsaw

Experienced Researchers - ER

Thomas Konstandin

IFAE

Eugeny Babichev

Paris VII

Narendra Sahu

Lancaster

Katarzyna Zuleta

Ioannina

Nicholas Chatillon

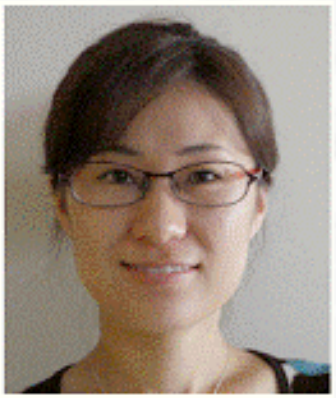
Ioannina

Arman Shafieloo

Oxford

Hael Collins

Copenhagen



Eun Kyung Park

Bonn

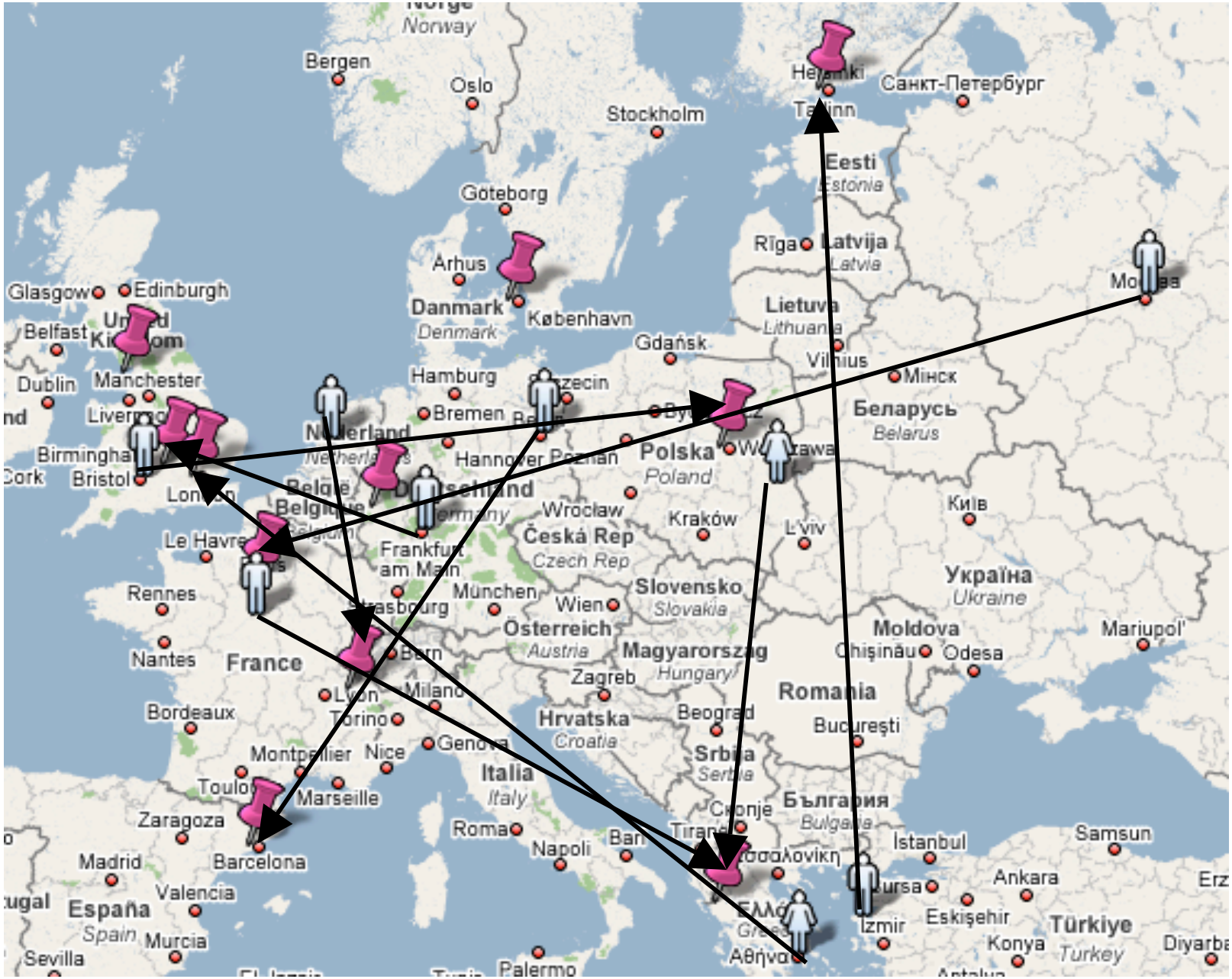
Gerasimos Rigopoulos

Helsinki

Paul Hunt

Warsaw

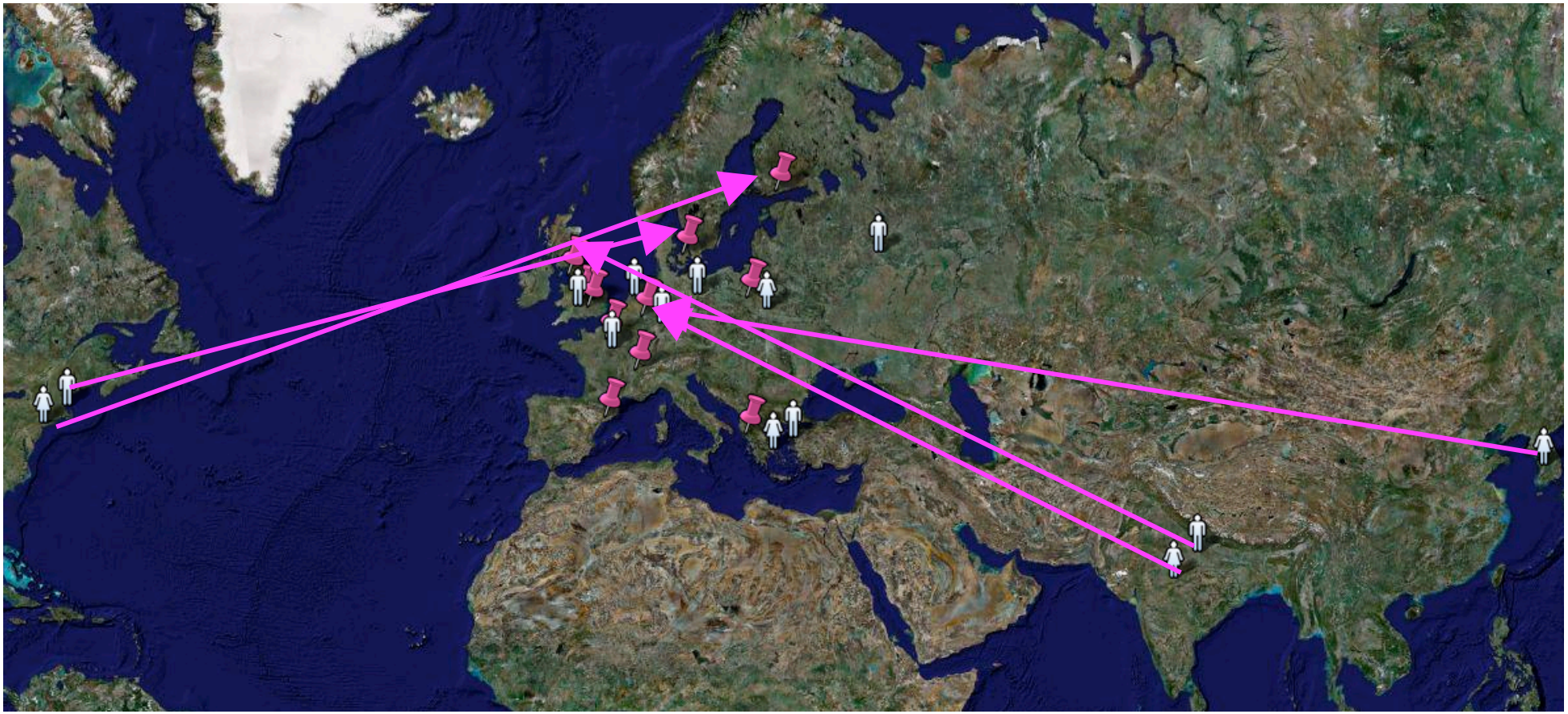
Mobility within Europe



‘Addressing gender balance’

- 6 of the 19 ESR/ER appointed so far are women
- ~35% of the speakers in the annual school are women

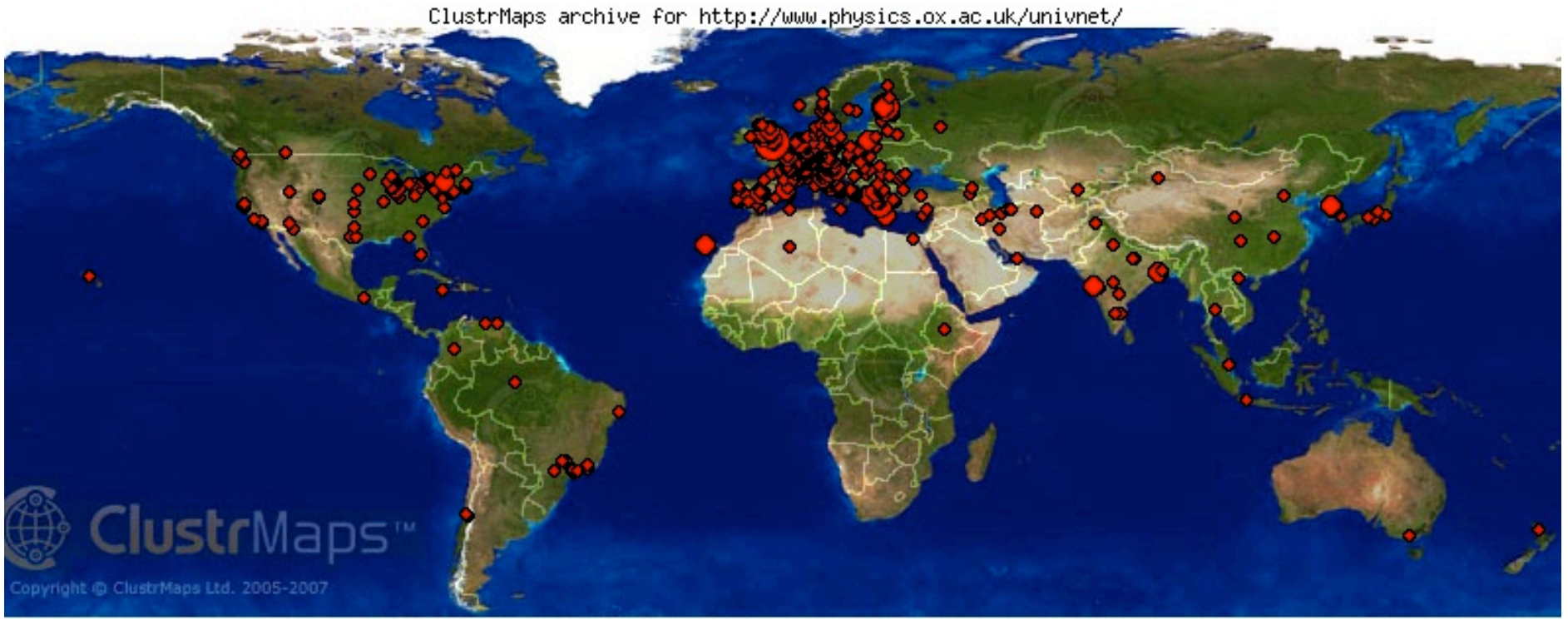
‘Opening the door to third country researchers’



~30% of the young researchers are non-EU

Universenet Website

Details of participating teams, young researchers, meetings, publications, outreach …



● = 100 - 999 ● = 10 - 99 ● = 1 - 9 visits

The above map depicts: 3699 visitors from 6 Apr 2007 to 6 Apr 2008

Downloadable E-bulletins with the network's news are issued every 6 months …

UniverseNet Outreach

CERN COURIER

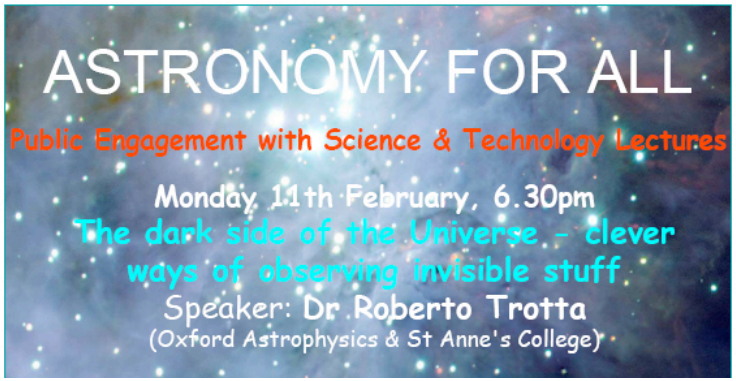
Sep 19, 2007

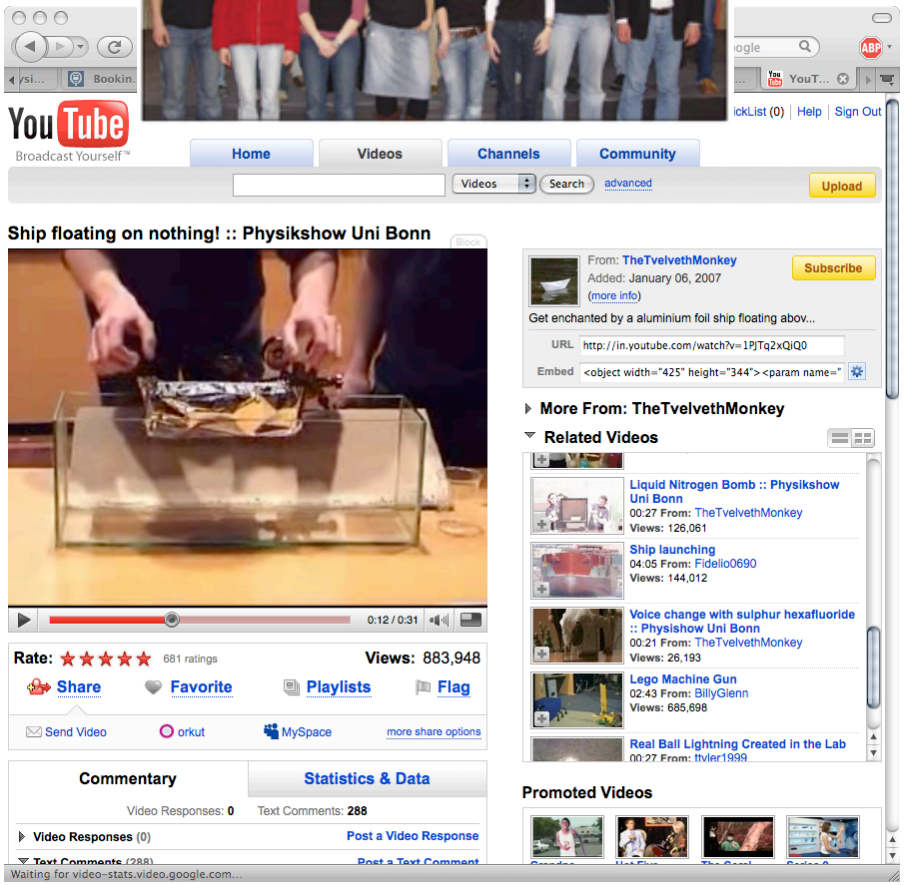
Inside Story: It's Physikshow time in Germany

Particle theorist Herbi Dreiner describes how the Physikshow by students in Bonn is working to build the next generation of good science communicators.

KARI ENQVIST

moni-mutkai-suus





BLUEPRINT
The newsletter of the University of Oxford
Vol 7, No 1 05 October 2006 www.ox.ac.uk/blueprint

■ A project co-ordinated by Professor Subir Sarkar in the Department of Physics has been awarded €3.53m in the Sixth Framework Programme of the European Union. 'UniverseNet', consisting of 23 universities and 16 research institutes in 11 countries, will address fundamental questions such as 'why are we made out of matter rather than antimatter?'; 'what is the dark matter and the even more mysterious dark energy which dominate the universe?'; and 'why are there just four space-time dimensions?'.

We have met most of the "good practice" targets …

- Participative Management and Communication
- Enriching Networking
- Fruitful Training of ESRs & Transfer of Knowledge (ToK) by ERs

But *can* still improve in certain respects:

- ➢ better reporting on activities (especially inter-team visits)
- ➢ acknowledgement of network support in publications
- ➢ more efficient use of mobility funds by young researchers
- ➢ …

Finally an open problem: how to bridge the 'culture gap' between ***astronomy*** *and* ***particle physics*** *in our training activities?*