



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



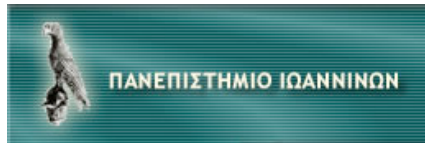
John McDonald



Subir Sarkar



Nick Mavromatos



Kyriakos Tamvakis



John Ellis



Mariano Quiros



Antonio Masiero

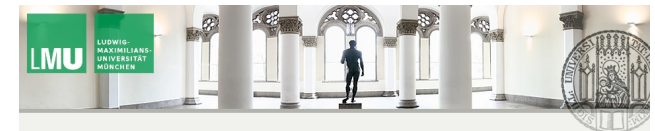


Julien Lesgourgues

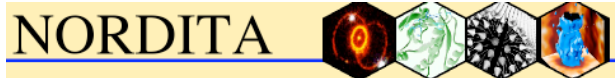


Université Paris 7 - Denis-Diderot

Pierre Binetruy



Slava Mukhanov



Anupam Mazumdar



Kari Enqvist



RHEINISCHE FRIEDRICH-WILHELMS-UNIVERSITÄT

Manuel Drees

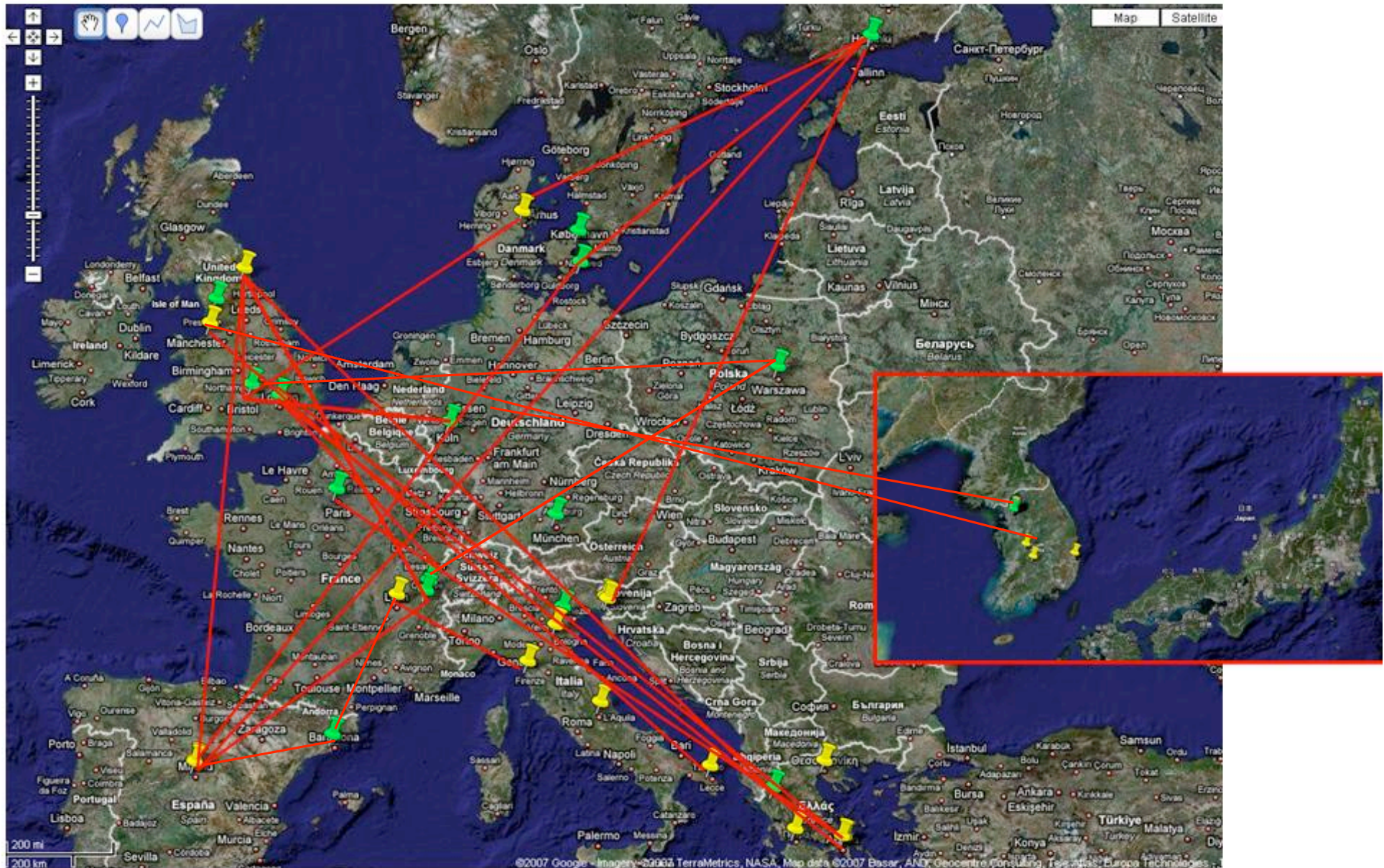


Zygmunt Lalak



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 accommodated in the APC, Paris 'Extended Team' (no changes to budget or Contract necessary)

A screenshot of the Institut de Physique Théorique website. The header features the CEA logo on the left, the text "Institut de Physique Théorique" in orange, and "Direction des Sciences de la Matière - CEA-Saclay" below it. On the right, it says "Unité de Recherche Associée au CNRS" and has a logo with "CKS" and "G0". The main content area shows the date "Thursday, September 25, 2008" and the email "web-iph@cea.fr". The title is "Physics Beyond the Standard Model Group" with a subtitle "/ Scientific Activities / Particle Physics and Astrophysics / Physics Beyond the Standard Model Group". Below this is a navigation bar with buttons for "People", "Networks", "Seminars", "Events", "Job Openings", and "Contact". A paragraph of text reads: "Within the Particle Physics and Astrophysics group at IPHT, our research team focuses on various topics in particle theory beyond the Standard Model, collider physics, neutrinos and flavor physics, dark matter, dark energy, gravitational waves..."

cea

Institut de Physique Théorique

Direction des Sciences de la Matière - CEA-Saclay

Unité de Recherche Associée au CNRS

Thursday, September 25, 2008

web-iph@cea.fr

Physics Beyond the Standard Model Group

/ Scientific Activities / Particle Physics and Astrophysics / Physics Beyond the Standard Model Group

People Networks Seminars Events Job Openings Contact

Within the **Particle Physics and Astrophysics** group at IPHT, our research team focuses on various topics in particle theory beyond the Standard Model, collider physics, neutrinos and flavor physics, dark matter, dark energy, gravitational waves...



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

Mytilene Island of Lesbos, Greece



Fourth Aegean Summer School Black Holes

17 - 22 September 2007

Lecturers

S. Carlip
C. Charmousis
R. Gregory
P. Kanti
H. Kodama
K. Kokkotas
S. Mathur
G. Neugebauer
N. Obers
S. Seahra
G. Siopsis
U. Sperhake

First Annual School of the EU Network "UniverseNet" The Origin of the Universe

24 - 29 September 2007

Lecturers

A. Challinor
E. Copeland
J. Knapp
D. Langlois
J. Peacock
F. Quevedo
S. Pokorski
A. Riotto
A. Strumia
S. Trivedi
P. Ullio

The Aegean Summer School is organized by the Physics Department of the National Technical University of Athens and sponsored by: Physics Department of the University of Tennessee, Ministry of the Aegean, Municipality of Mytilene, Prefecture of Lesbos.

The EU Network School on the Origin of the Universe is organized by "UniverseNet" (MRTN-CT-2006-005863) funded by the European Commission. Both schools will be held in the Municipal Theatre of Mytilene, courtesy of the Municipality of Mytilene.

Information: <http://www.physics.ntua.gr/cosmo07>
Deadline for applications: 16 July 2007

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

FOOTBALL

The second network meeting
University of Oxford, UK



The Origin of the Universe

Seeking links between fundamental physics & cosmology

School: 22, 23, 24, 25 September 2008

Mid-Term Review: 26 September 2008

Venue: Martin Wood lecture theatre
Department of Physics

Lecturers:

- **Jenni Adams** (Christchurch)
- **Lars Bergstorm** (Stockholm)
- **Wilfried Buchmuller** (Hamburg)
- **Sergio Colafrancesco** (Rome)
- **Joe Conlon** (Oxford)
- **Sacha Davidson** (Lyon)
- **Amol Dighe** (Mumbai)
- **Hiranya Peiris** (Cambridge)

Coordinator: **Subir Sarkar**
Administrator: **Ana Malhado**

More information:

<http://www.physics.ox.ac.uk/univnet/meeting2008/home.htm>
universenet@physics.ox.ac.uk

UniverseNet is supported by the European Community
(contract n. MRTN-CT-2006-035863)

Marie Curie Actions
Human resources and mobility

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

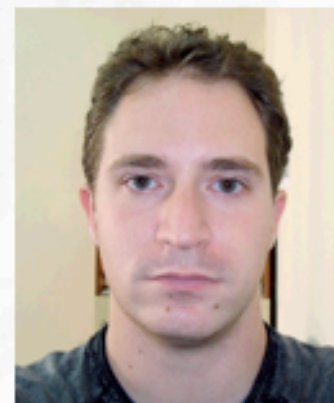
Helsinki

Photo Soon!



Lotta Mether

CERN



Nicholas Harries

CERN



**Charalampos
Bogdanos**

Warsaw

Ioannis Ntalianis

Experienced Researchers - ER



**Thomas
Konstandin**

IFAE



Eugeny Babichev

Paris VII



Narendra Sahu

Lancaster



Katarzyna Zuleta

Ioannina

Nicholas Chatillon

Ioannina



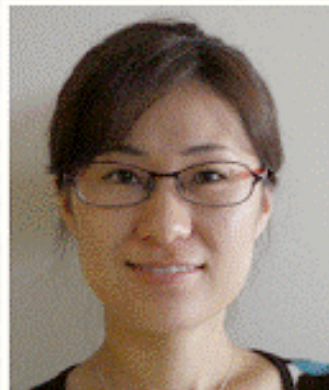
Arman Shafieloo

Oxford



Hael Collins

Copenhagen



Eun Kyung Park

Bonn



Gerasimos Rigopoulos

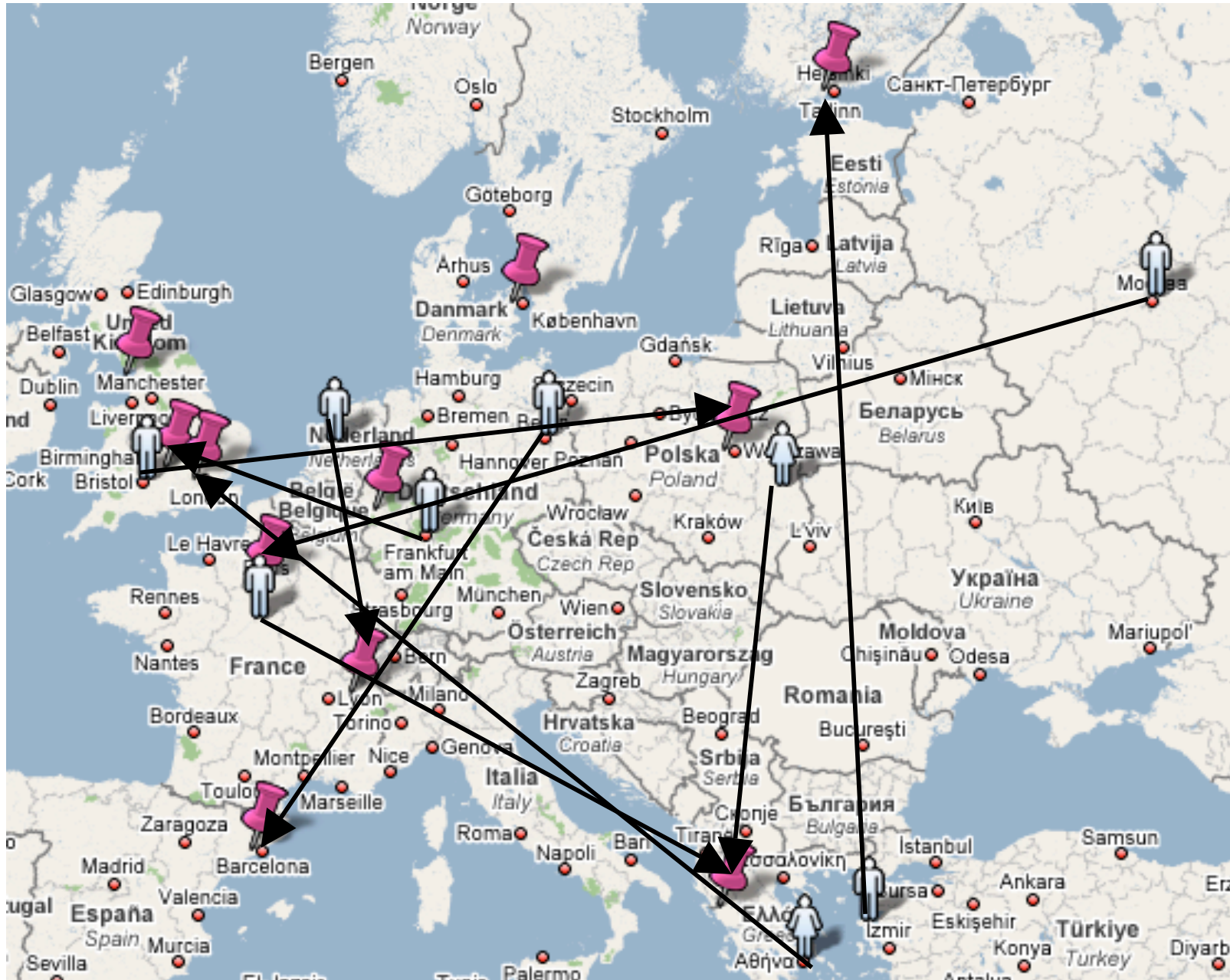
Helsinki



Paul Hunt

Warsaw

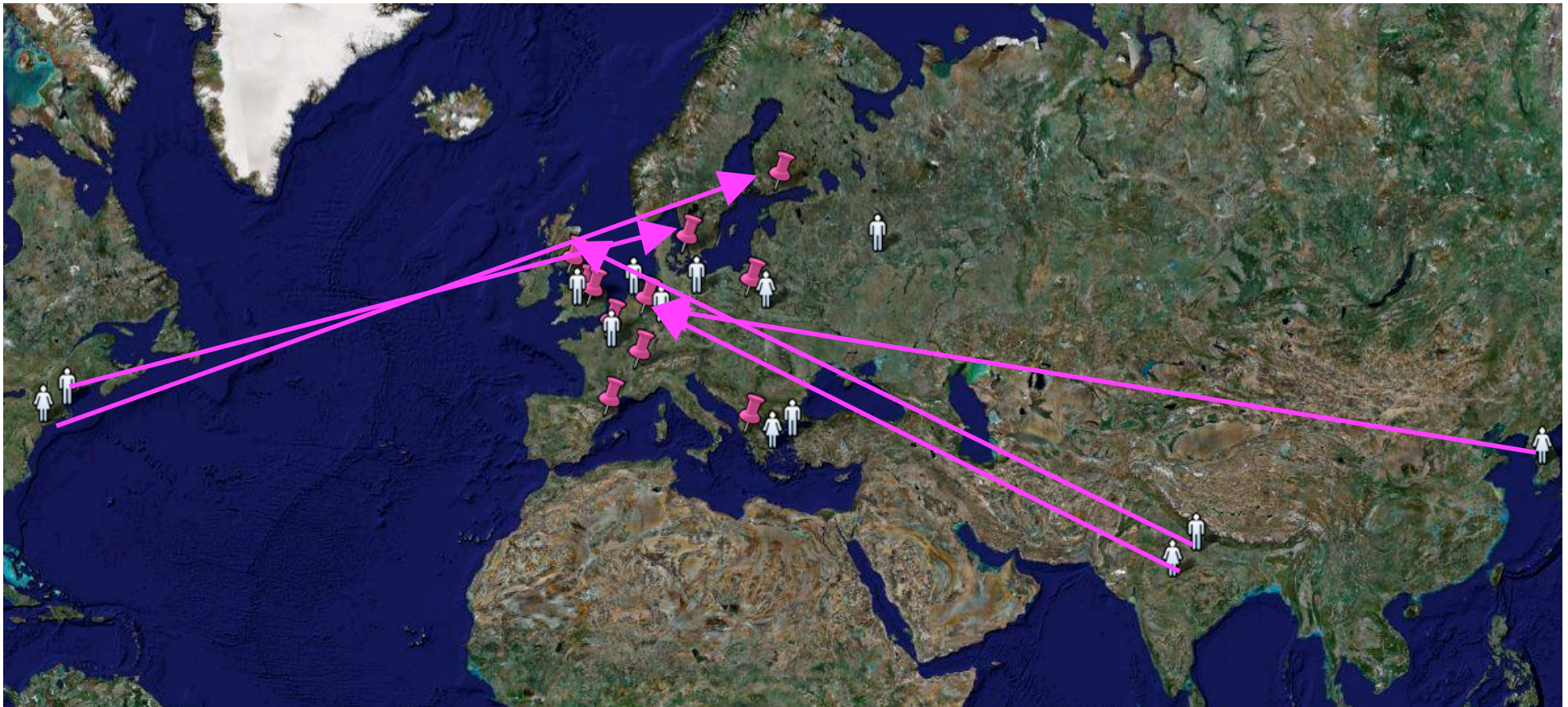
Mobility within Europe



'Addressing gender balance'

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

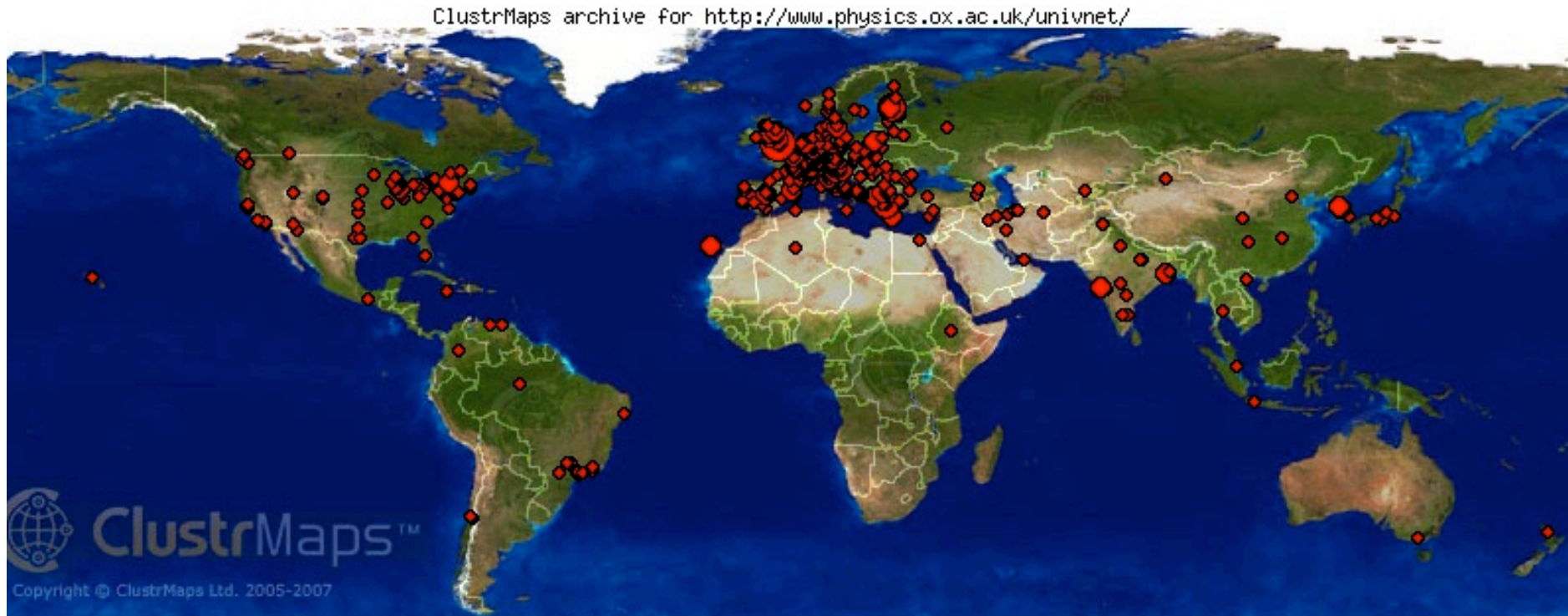
'Opening the door to third country researchers'



~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

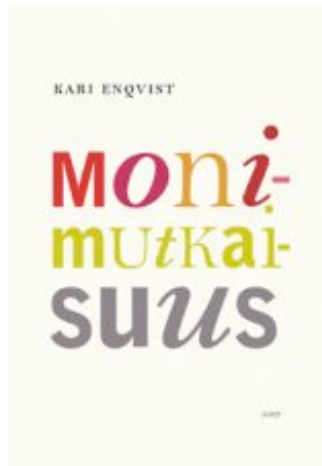
The above map depicts: 3699 visitors from 6 Apr 2007 to 6 Apr 2008

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

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.



UniverseNet Outreach

ASTRONOMY FOR ALL
 Public Engagement with Science & Technology Lectures

Monday, 11th February, 6.30pm
 The dark side of the Universe - clever ways of observing invisible stuff
 Speaker: Dr Roberto Trotta
 (Oxford Astrophysics & St Anne's College)

Ship floating on nothing! :: Physikshow Uni Bonn

From: **TheTvelvethMonkey**
 Added: January 06, 2007
 (more info)

Get enchanted by a aluminium foil ship floating above...

URL: <http://in.youtube.com/watch?v=1PjTq2xQJQ0>

Embed: `<object width="425" height="344"><param name="`

More From: TheTvelvethMonkey

Related Videos

- Liquid Nitrogen Bomb :: Physikshow Uni Bonn**
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- Ship launching**
04:05 From: Fidelity0690
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- Voice change with sulphur hexafluoride :: Physikshow Uni Bonn**
00:21 From: TheTvelvethMonkey
Views: 26,193
- Lego Machine Gun**
02:43 From: BillyGlenn
Views: 685,698
- Real Ball Lightning Created in the Lab**
00:27 From: ItVier1999

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 Views: 883,948

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Commentary **Statistics & Data**

Video Responses: 0 Text Comments: 288

Video Responses (0) Post a Video Response

Text Comments (288) Post a Text Comment

Waiting for video-stats.video.google.com...



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?