

NExT PhD School

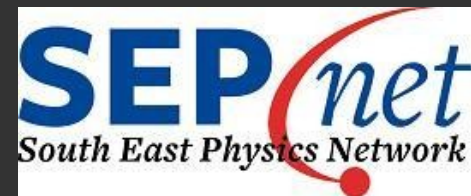
Alexander Belyaev

Southampton University & Rutherford Appleton Laboratory (STFC)



May 04 , 2011

NExT Meeting



Why NExT PhD School?

- **Idea behind the NExT Institute** [www.next-institute.ac.uk]

[Director: Prof. S. Moretti; Deputy Director: Dr. C. H. Shepherd-Themistocleous]

- ➔ *to bring interaction between experimentalists and theorists to a new level of day-to-day interaction*
- ➔ *to understand and delineate underlying theory from expected new signals from Large Hadron Collider [LHC] data*

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 - ➔ *has successfully started High Energy Physics (HEP) PhD school in October 2009*

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- **The idea behind the NExT PhD School**
 - ➔ *crucial ingredient of the NExT training program*
 - ➔ *provides an effective learning/interaction for theorists and experimentalists*
 - ➔ *maximizes efficiency of teaching HEP courses, brings expertise of lecturers at different sites together to complement each other*
 - ➔ *based on effective use of Video Conferencing Network*

NEXt PhD School at a glance

Sites

- *University of Southampton [SOTON],
Rutherford Appleton Laboratory (STFC)[RAL]
Royal Holloway University of London[RHUL], University of Sussex[SUSSEX]*

Coordinators

- *Dr Alexander Belyaev [SOTON](school coordinator), Dr Bill Murray [RAL]
Dr Stephen West [RHUL], Dr Stephan Huber [SUSSEX]*

PhD School Program: compulsory core and optional non-core courses

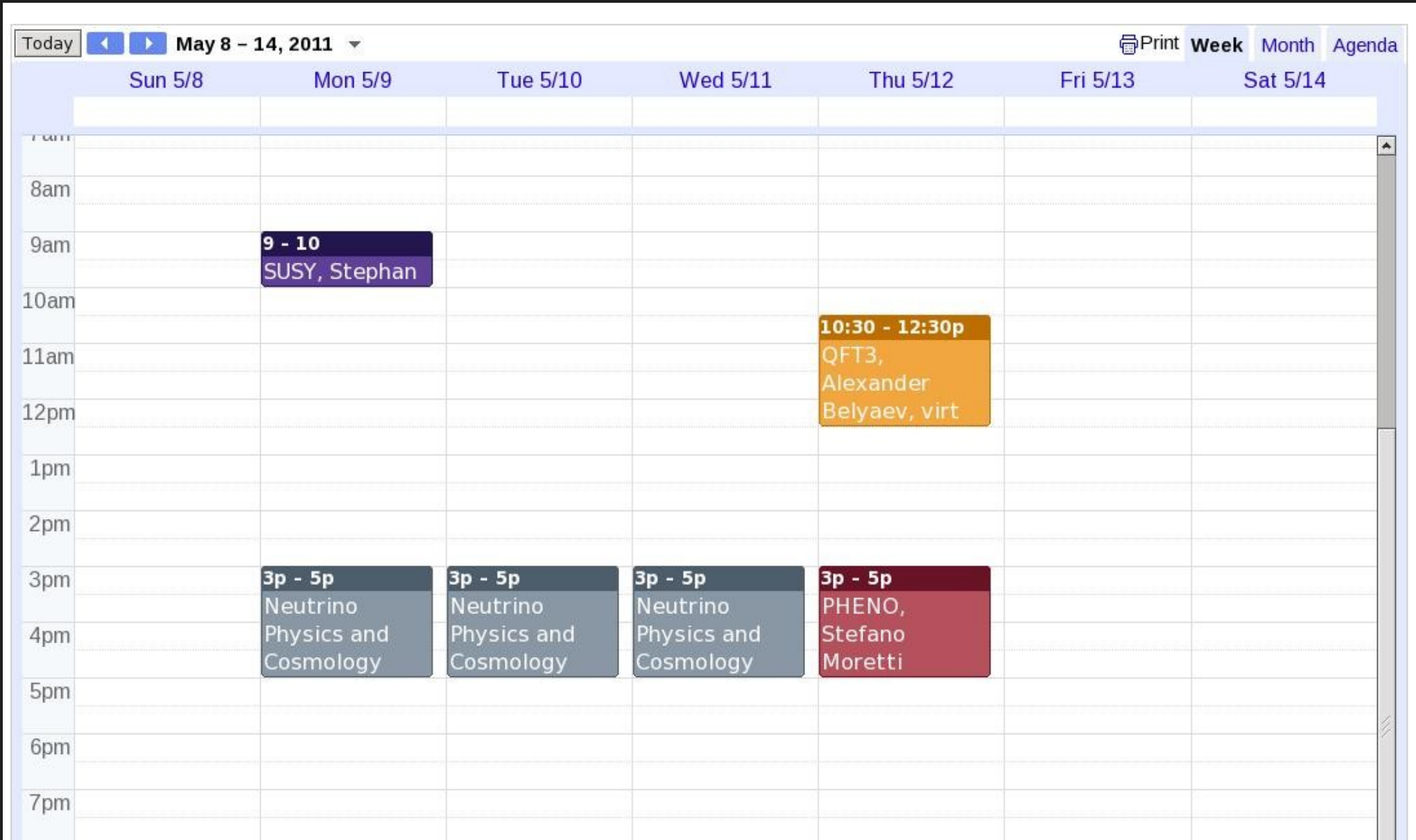
- *core courses: Quantum Field Theory (1,2,3), Supersymmetry, Standard Model, Phenomenology, Group Theory*
- *non-core courses: Neutrino Physics and Particle Cosmology, Lattice QCD
Flavour Physics, Hadron Collider Physics, Extra Dimensions, Statistics and
Signal-to-Background analysis*

Web page <https://sites.google.com/site/nextphd/next-phd-schedule>

Assessment

- *common assessment methods are being used*

NExT PhD School Schedule via Google calendars

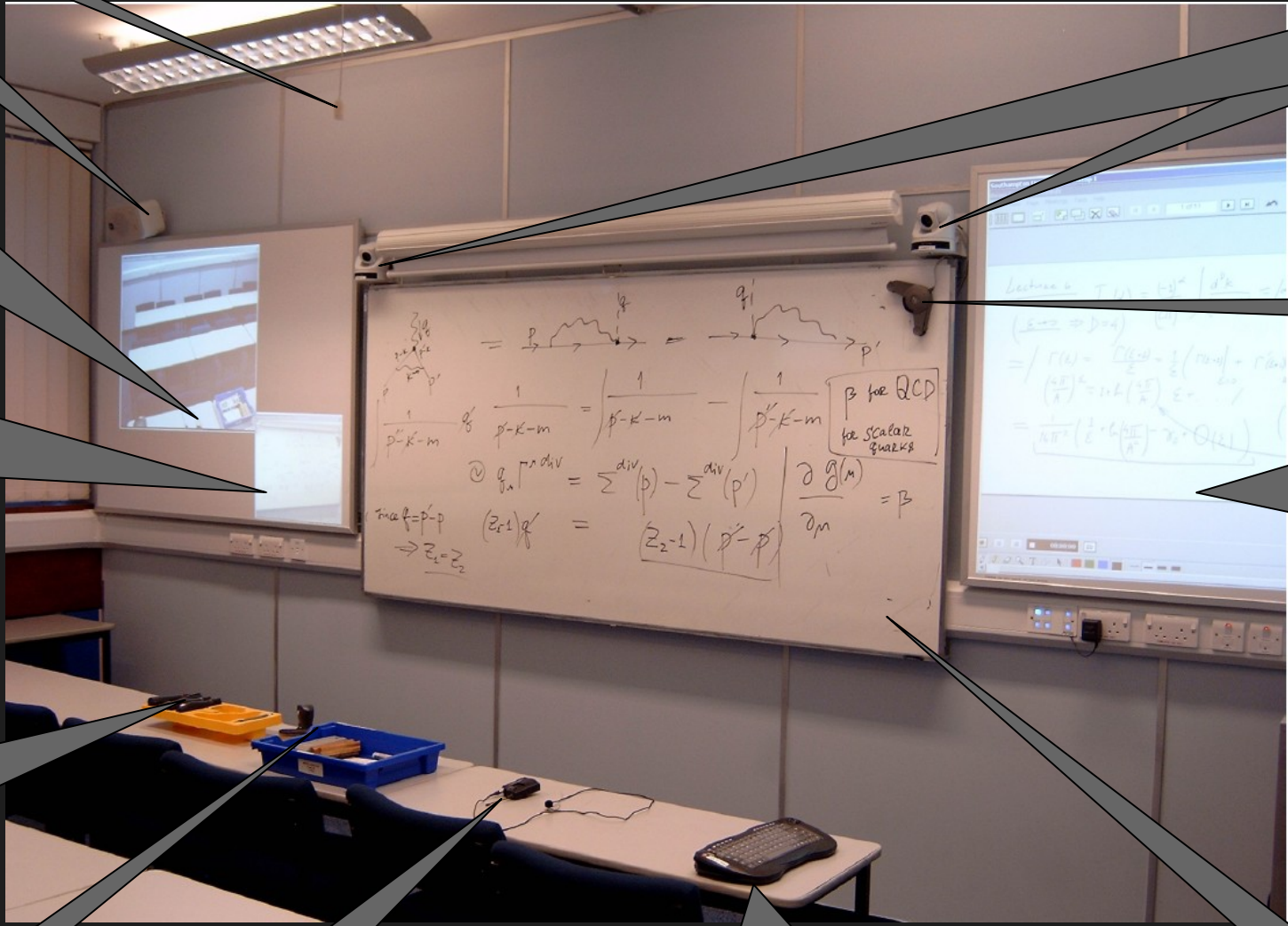


Novelty and New Experiences @ NExT PhD School

- **Interdisciplinary spirit**
 - ➔ *both theory and experimental modules*
- **Networking & Meetings**
 - ➔ *regular networking of staff & students, regular NExT physics meetings involving students*
- **Shared/joint supervision**
 - ➔ *placement of students with different experiments*
- **Open to ALL PhD students from the respective University node**
 - ➔ *not only NExT PhD students can attend and it will stay this way*
- **Video Conferencing is a crucial component of NExT PhD teaching – new teaching experience has been acquired**
 - ➔ *the way to talk to students at the remote sites, using e-beam and e-white board*
 - ➔ *It is much more important (vs usual lecture) to provide students with the notes*
 - ➔ *session on improving teaching/delivery methods with videoconferencing*
- **Technical aspects of the video conferencing @ NExT PhD school**
 - ➔ *Technical support is absolutely crucial – thanks to all experts: Mike Hill, Simon Harris,, Glen Smith (Soton), Andrew Casey (RHUL), Fabrizio Salvatore (Sussex)*

Video Conferencing – live-view

- one of the microphones
- speaker
- One of the virtual desktops presenting the remote site
- One of the virtual desktops with physical white board
- Pens for e-beam module
- eraser for e-beam module



- cameras pointing to local students
- E-beam module
- virtual desktop with electronic white board from e-beam
- physical white Board with the page from QFT course

- wireless microphone
- Wireless keyboard to communicate with ICUBE

Current PhD Projects/Supervisors/Sites

Lead Inst.	Project	Supervisors	Affiliation
Soton	Gluon-gluon fusion into vector boson pairs as a probe into the ElectroWeak Symmetry Breaking mechanism:...	E Accomando/ C Shepherd- Themistocleous	RAL
Soton	Testing New Physics with Neutrinos and Cosmology	Di Bari / S Peeters	Sussex
Sussex	Beyond the MSSM with high-pT and flavour observables at the LHC	S Jaeger/ P Teixeira-Dias	RHUL
RHUL	Optimised Model Discrimination for Jets + Leptons + Missing Transverse Energy Signatures at the LHC	N Kauer / A Belyaev	Soton
RHUL	Dark Matter Searches with the ATLAS Experiment	S West / W Murray	RAL
Sussex	Search for Supersymmetry	P F Salvatore / S F King	Soton
Soton	Delineating underlying new physics at the LHC	A Belyaev / C Shepherd- Themistocleous	RAL
Sussex	Small non-thermal Black Holes at the LHC	X Calmet/ C Shepherd- Themistocleous	RAL
Soton	An investigation into the low q^2 -region in $B \rightarrow K^* l^+ l^-$	R Zwicky/ A Bevan	QMUL

Do we interact enough? It is time for the NExT PhD workshop!



The poster features a background image of a complex particle detector structure, possibly a bubble chamber or similar, with a blue and white color scheme. The word "NExT" is prominently displayed in the upper left, with the 'E' and 'X' containing pink arrows pointing towards each other. Below it, "PhD School Workshop" is written in large, bold, red letters. At the bottom, there is a row of logos for the University of Southampton, Royal Holloway University of London, SEPnet (South East Physics Network), US (University of Sussex), and Science & Technology Facilities Council Rutherford Appleton Laboratory. The dates and location "18-20 July 2011, The Cosener's House Abingdon, UK" are listed in white text. At the very bottom, the words "Speakers:" and "Organizing committee:" are written in red.

18-20 July 2011, The Cosener's House

- **Aim**

- ➔ *to bring PhD students and supervisors together to present/exchange/generate ideas*

- **Format**

- ➔ *PhD students of the first year are invited to present a poster*
- ➔ *second year students are invited to give a 15-20 minute talks on their research*
- ➔ *will have about four invited speakers with lectures/reviews during workshop (suggestions on the topics/speaker are welcome!)*

- **Participation**

- ➔ *everybody is encouraged to participate!*
- ➔ *expenses for SEPnet/NExT participants will be covered*
- ➔ *non-SEPnet participants, especially students are strongly encouraged, will be covered by their Schools*

- **Registration is open— link at NExT PhD web page to indico.cern.ch**

NExT PhD web page at indico.cern.ch

http://indico.cern.ch/conferenceDisplay.py?confId=131526

Search

Europe/London English

NExT PhD Workshop

18-20 July 2011 *Cosener's House, UK*

Europe/London timezone

Search

Overview

Scientific
Programme

Timetable

Contribution
List

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Registration

Registration
Form

NExT PhD Workshop is aimed to bring
NExT PhD students together to present and
share their ideas

Dates: from 18 July 2011 10:00 to 20 July 2011 12:00

Timezone: Europe/London

Location: *Cosener's House, UK*

Support

SUMMARY

- **Success of the NExT PhD School**
 - ➔ *Successful start and running*
 - ➔ *Novelty: Interdisciplinary , Networking , Shared/Joint supervision, open to all PhD students*
 - ➔ *New experience including new elements of teaching using videoconferencing equipment*
- **NExT PhD workshop – an important event to bring us closer to exchange/generate ideas**
 - ➔ *your opinion/ suggestions are very important!*
- **Open questions, future plans**
 - ➔ *further optimization/sharing of PhD courses, program and assessment*
 - ➔ *video-record of PhD courses*