

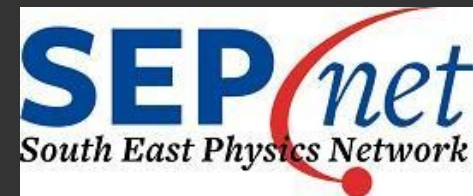
First NExT PhD Workshop

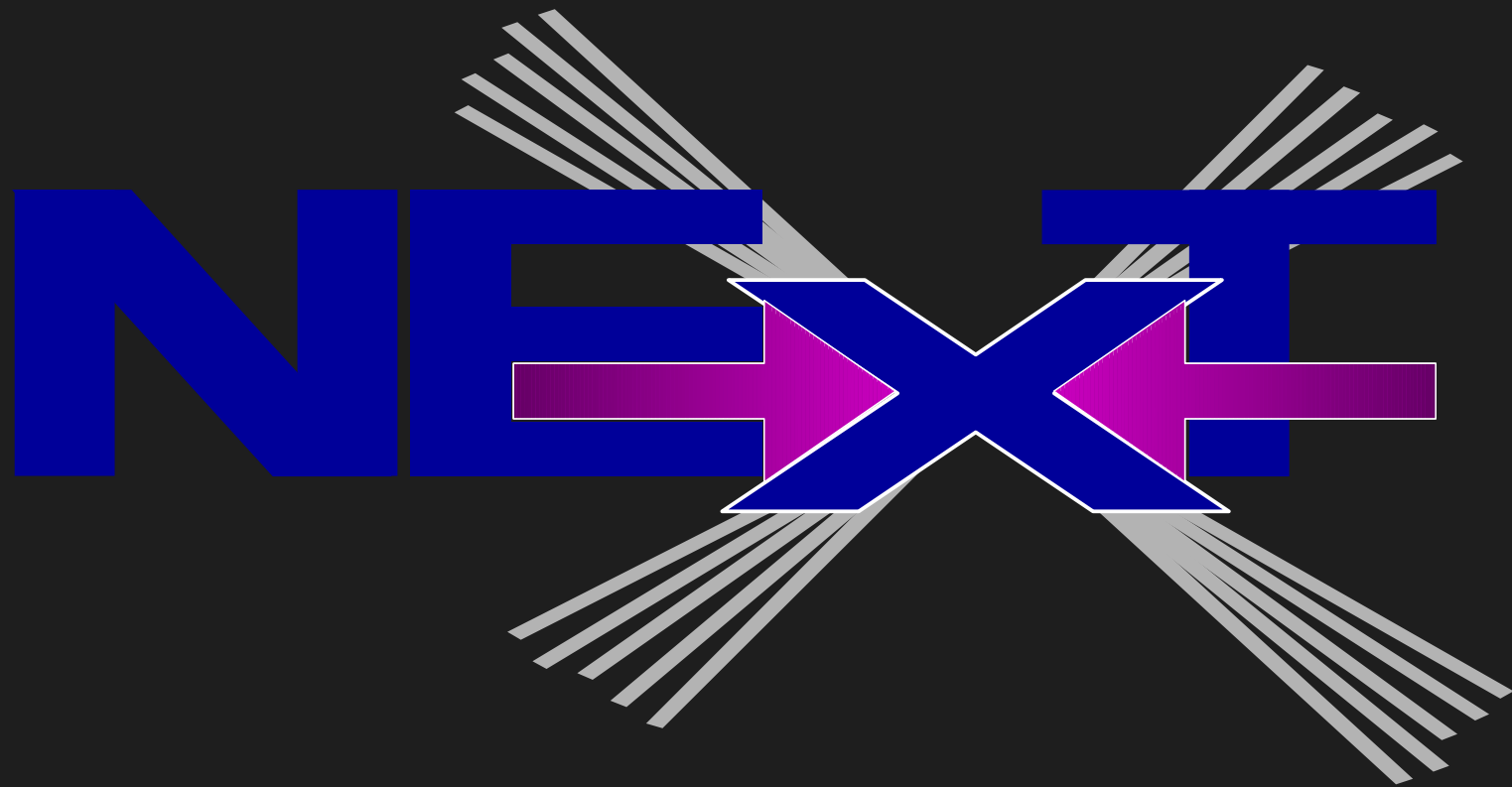
Alexander Belyaev

Southampton University & Rutherford Appleton Laboratory

July 18-20

Cosener's House







Science & Technology Facilities Council
Rutherford Appleton Laboratory



Royal Holloway
University of London

NEXX

UNIVERSITY OF
Southampton

US
University of Sussex



The NExT institute and the NExT PhD School

- **Why NExT Institute?** [www.next-institute.ac.uk] (since 2006)
[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 LHC*
- **The NExT Institute as a part of SEPnet**
 - ➔ *has successfully started HEP PhD school in October 2009*
- **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 and to share the load*
 - ➔ *based on effective use of Video Conferencing Network*

NExT PhD School at a glance

Sites

- *University of Southampton [SOTON], Rutherford Appleton Laboratory [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/>

Assessment

- *common assessment methods are being used*

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 one of the main components of NExT PhD teaching – new teaching experience has been acquired**

Current PhD Projects/Supervisors/Sites

Lead Inst.	Project/PhD Student	Supervisors	Affiliation
Soton	<i>The phenomenology of the 4-site model</i> Diego Becciolini	E Accomando/ C Shepherd- Themistocleous	RAL
Soton	<i>Testing New Physics with Neutrinos and Cosmology</i> Luca Marzola	Di Bari / S Peeters	Sussex
Sussex	<i>Beyond the MSSM with high-pT and flavour observables at the LHC</i>	S Jaeger/ P Teixeira-Dias	RHUL
RHUL	<i>Optimised Model Discrimination using V+jets at Hadron Colliders</i> Stephan Tietz	N Kauer / A Belyaev	Soton
RHUL	<i>Dark Matter Searches with the ATLAS Experiment</i> Andrew Williams	S West / W Murray	RAL
Sussex	<i>Search for Supersymmetry</i>	P F Salvatore / S F King	Soton
Soton	<i>Delineating SUSY models at the LHC</i> Patrik Svantesson	A Belyaev / C Shepherd- Themistocleous	RAL
Sussex	<i>Quantum Black Holes</i> Nina Jasmin Gausmann	X Calmet/ C Shepherd- Themistocleous	RAL
Soton	<i>An investigation into the low q2-region in B-K*l+l-</i> Maria Dimou	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 particle detector or network structure. At the top center, the word "NExT" is written in a stylized blue font with pink arrows pointing towards each other. Below it, the text "PhD School Workshop" is displayed in large, bold, white letters. A horizontal banner contains 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. Below the banner, the event details are listed: "18-20 July 2011, The Cosener's House, Abingdon, UK". A "Speakers:" section lists I. Antoniadis (CERN) [Extra Dimensions], F. Sannino (CP3-Origins and DIAS) [Technicolour], M. Kraemer (Aachen University) [Supersymmetry], and C. Lester (Cambridge) [Collider Physics]. An "Organizing committee:" section lists A. Belyaev (Chair), F. Di Lodovico, S. Moretti, S. Huber, C. Shepherd-Themistocleous, and S. West. Contact information includes next.phd@gmail.com and the URL https://indico.cern.ch/event/next_phd.

NExT

PhD School Workshop

UNIVERSITY OF Southampton | Royal Holloway University of London | SEPnet South East Physics Network | US University of Sussex | Science & Technology Facilities Council Rutherford Appleton Laboratory

18-20 July 2011, The Cosener's House
Abingdon, UK

Speakers:

I. Antoniadis (CERN)	[Extra Dimensions]
F. Sannino (CP3-Origins and DIAS)	[Technicolour]
M. Kraemer (Aachen University)	[Supersymmetry]
C. Lester (Cambridge)	[Collider Physics]

Organizing committee:
A. Belyaev (Chair), F. Di Lodovico, S. Moretti, S. Huber,
C. Shepherd-Themistocleous, S. West
next.phd@gmail.com https://indico.cern.ch/event/next_phd

18-20 July 2011
The Cosener's House

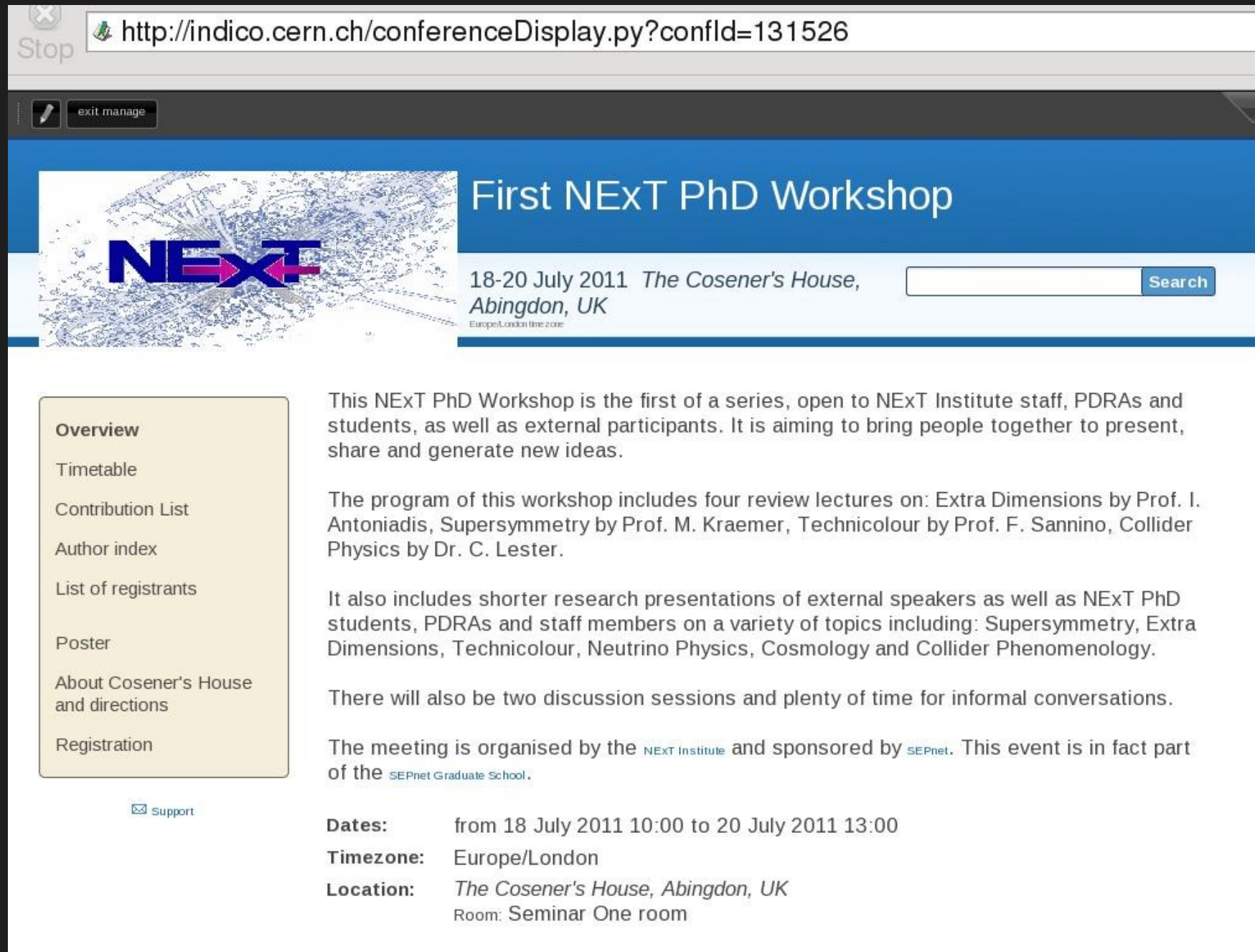
● Aim

- *It is aiming to bring people together to present, share and generate new ideas*

● Format

- *Two lectures (50' each lecture) on Extra-Dimensions (I. Antoniadis)
Technicolour (F. Sannino)
Supersymmetry (M. Kraemer)
Collider Physics (C. Lester)*
- *PhD student's and Staff members talks (25-30')*
- *Two discussions sessions*
- *Poster session*

NExT PhD Workshop web page at indico.cern.ch



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

exit manage

First NExT PhD Workshop

18-20 July 2011 *The Cosener's House, Abingdon, UK*
Europe/London time zone

Overview

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[Poster](#)

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[Support](#)

This NExT PhD Workshop is the first of a series, open to NExT Institute staff, PDRAs and students, as well as external participants. It is aiming to bring people together to present, share and generate new ideas.

The program of this workshop includes four review lectures on: Extra Dimensions by Prof. I. Antoniadis, Supersymmetry by Prof. M. Kraemer, Technicolour by Prof. F. Sannino, Collider Physics by Dr. C. Lester.

It also includes shorter research presentations of external speakers as well as NExT PhD students, PDRAs and staff members on a variety of topics including: Supersymmetry, Extra Dimensions, Technicolour, Neutrino Physics, Cosmology and Collider Phenomenology.

There will also be two discussion sessions and plenty of time for informal conversations.

The meeting is organised by the [NExT Institute](#) and sponsored by [SEPnet](#). This event is in fact part of the [SEPnet Graduate School](#).

Dates: from 18 July 2011 10:00 to 20 July 2011 13:00

Timezone: Europe/London

Location: *The Cosener's House, Abingdon, UK*
Room: Seminar One room

Time Table:

please go to detailed view and upload your talk!

Overview Timetable Contribution List Author index List of registrants Poster About Cosener's House and directions Registration	Mon 18/07	Tue 19/07	Wed 20/07	All days	
	Print PDF Full screen Detailed view Filter				
	10:00	Arrival/Registration/Coffee			
		<i>Seminar One room, The Cosener's House, Abingdon, UK</i>			10:00 - 11:00
	11:00	Welcome			<i>BELYAEV, Alexander</i>
		<i>Seminar One room, The Cosener's House, Abingdon, UK</i>			11:00 - 11:10
		Extra dimensions. Lecture 1			<i>ANTONIADIS, Ignatios</i>
		<i>Seminar One room, The Cosener's House, Abingdon, UK</i>			11:10 - 12:00
	12:00	Dark Matter from Extra Dimensions			<i>CACCIAPAGLIA, Giacomo</i>
		<i>Seminar One room, The Cosener's House, Abingdon, UK</i>			12:00 - 12:30
	Lunch				
13:00					
				12:30 - 14:00	
14:00	Extra Dimensions. Lecture 2.			<i>ANTONIADIS, Ignatios</i>	
	<i>Seminar One room, The Cosener's House, Abingdon, UK</i>			14:00 - 14:50	
15:00	LHC Physics: BSM search techniques. Lecture 1.			<i>LESTER, Christopher Gorham</i>	
	<i>Seminar One room, The Cosener's House, Abingdon, UK</i>			14:50 - 15:40	
	Coffee				
16:00					
				15:40 - 16:10	

Time Table at glance

Mon 18/7	
10:00	Arrival/Registration/Coffee <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 10:00 - 11:00
11:00	Welcome <i>BELYAEV, Alexander</i> <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 11:00 - 11:10
	Extra dimensions. Lecture 1 <i>ANTONIADIS, Ignatios</i> <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 11:10 - 12:00
12:00	Dark Matter from Extra Dimensions <i>CACCIAPAGLIA, Giacomo</i> <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 12:00 - 12:30
13:00	Lunch 12:30 - 14:00
14:00	Extra Dimensions. Lecture 2. <i>ANTONIADIS, Ignatios</i> <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 14:00 - 14:50
15:00	LHC Physics: BSM search techniques. Lecture 1. <i>LESTER, Christopher Gorham</i> <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 14:50 - 15:40
16:00	Coffee 15:40 - 16:10
	Top Quark Phenomenology of the ADD model and the Minimal Length Scenario <i>MIMASU, Ken</i> <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 16:10 - 16:35
	Quantum Black Holes <i>GAUSMANN, Nina</i> <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 16:35 - 16:50
17:00	Minimal Universal Extra Dimensions at the LHC <i>BROWN, Matthew</i> <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 16:50 - 17:15
	Production of Doubly Charged Higgs Bosons at the LHC <i>AKERROYD, Andrew</i> <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 17:15 - 17:40
18:00	Discussion <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 17:40 - 18:30
19:00	Dinner 19:00 - 20:30

Tue 19/7	
09:00	Technicolour. Lecture 1. <i>SANNINO, Francesco</i> <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 09:00 - 09:50
10:00	LHC Physics: BSM search techniques. Lecture 2. <i>LESTER, Christopher Gorham</i> <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 09:50 - 10:40
11:00	Coffee 10:40 - 11:10
	The Unitarity Triangle fit in the Standard Model and beyond <i>BONA, Marcella</i> <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 11:10 - 11:40
12:00	Time-dependent CP asymmetries and new physics in charm <i>INGUGLIA, Gianluca</i> <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 11:40 - 12:05
	SO(10)-inspired Leptogenesis and its predictions <i>MARZOLA, Luca</i> <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 12:05 - 12:30
13:00	Lunch 12:30 - 14:00
14:00	Technicolour. Lecture 2. <i>SANNINO, francesco</i> <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 14:00 - 14:50
15:00	Supersymmetry. Lecture1. <i>KRAEMER, Michael</i> <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 14:50 - 15:40
16:00	Coffee 15:40 - 16:10
	Exploring resonance annihilation of Neutralino Dark Matter via muon signatures from Higgs bosons at the LHC <i>SVANTESSON, Patrik</i>
	General gauge mediation in five dimensions <i>MCGARRIE, Moritz</i> <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 16:35 - 17:00
17:00	String theory - a toolbox or ideology? <i>BERMAN, David</i> <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 17:00 - 17:30
	Discussion <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 17:30 - 18:00
18:00	Poster Session <i>Seminar One room, The Cosener's House, Abingdon, UK</i> 18:00 - 19:00
19:00	Dinner 19:00 - 20:30

Time Table at glance

Wed 20/7		
09:00	Supersymmetry. Lecture 2. <i>Seminar One room, The Cosener's House, Abingdon, UK</i>	<i>KRAEMER, Michael</i> 09:00 - 09:50
10:00	Signal-background interference in $gg \rightarrow H \rightarrow VV$ <i>Seminar One room, The Cosener's House, Abingdon, UK</i>	<i>KAUER, Nikolas</i> 09:50 - 10:15
	Flavour Physics in the Soft Wall Model <i>Seminar One room, The Cosener's House, Abingdon, UK</i>	<i>ARCHER, Paul</i> 10:15 - 10:40
11:00	Coffee	10:40 - 11:10
	Could the Higgs boson be the inflaton? <i>Seminar One room, The Cosener's House, Abingdon, UK</i>	<i>ATKINS, Michael</i> 11:10 - 11:35
	Gravitational Corrections to Fermion Masses in Grand Unified Theories <i>Seminar One room, The Cosener's House, Abingdon, UK</i>	<i>YANG, Ting-Cheng</i> 11:35 - 12:00
12:00	Summary <i>Seminar One room, The Cosener's House, Abingdon, UK</i>	12:00 - 12:30

See all details of Time Table in your folder!

Practical points

- From tomorrow Workshop starts at 9:00
- Coffee breaks: 10:40-11:30; 15:40-16:10
- Lunch: 12:30-14:00. There is no lunch on Wednesday
- Dinner: 19:00-20:30
- To access WIFI network **STFC-Guest** use user name and password provided in your folder

Welcome to First NExT PhD Workshop!