



The Abdus Salam
**International Centre
for Theoretical Physics**



Summer School on Particle Physics

Organizer(s): G. Isidori, M. Shaposhnikov, G. Villadoro, ICTP Local Organizer: A. Smirnov
Scientific Secretary: Daniel Hernandez Diaz
Collaboration(s): INFN - Italian Institute for Nuclear Physics
Trieste - Italy, 10 - 21 June 2013

Venue: Leonardo da Vinci Building Main Lecture Hall

Programme

Monday, 10 June 2013 (Room:Leonardo da Vinci Building Main Lecture Hall)

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|----------------------|---|
| 08:30 - 10:15 | (Room: Leonardo da Vinci Building, Lobby)
REGISTRATION and ADMINISTRATIVE FORMALITIES |
| 10:15 - 10:45 | Alexei SMIRNOV / ICTP
OPENING |
| 10:45 - 11:45 | Guido TONELLI / INFN, Pisa & CERN
The discovery of a(the) Higgs boson at LHC: latest results and implications in the quest for new physics - Opening Lecture |
| 11:45 - 12:00 | Discussion |
| 12:00 - 14:30 | --- Lunch Break --- |
| 14:30 - 15:30 | Keith ELLIS / Fermi National Accelerator Laboratory, USA
QCD, top and the LHC (I) |
| 15:30 - 15:45 | Discussion |
| 15:45 - 16:15 | --- Coffee Break --- |

16:15 - 17:15 **Abdelhak DJOUADI** / *Université Paris Sud, France*
Higgs Physics (I)

17:15 - 17:30 **Discussion**

18:30 - 20:30 (Room: Leonardo da Vinci Building Terrace)
--- RECEPTION ---

Tuesday, 11 June 2013 (Room:Leonardo da Vinci Building Main Lecture Hall)

09:00 - 10:00 **Keith ELLIS**
QCD, top and the LHC (II)

10:00 - 10:15 **Discussion**

10:15 - 10:45 --- Coffee Break ---

10:45 - 11:45 **Abdelhak DJOUADI**
Higgs Physics (II)

11:45 - 12:00 **Discussion**

12:00 - 14:30 --- Lunch Break ---

14:30 - 15:30 **Gilad PEREZ** / *Weizman Institute of Science, Rehovot, Israel*
Flavor physics (I)

15:30 - 15:45 **Discussion**

15:45 - 16:15 --- Coffee Break ---

16:15 - 17:15 **Pilar HERNANDEZ** / *University of Valencia, Spain*
Neutrino physics (I)

17:15 - 17:30 **Discussion**

Wednesday, 12 June 2013 (Room:Leonardo da Vinci Building Main Lecture Hall)

09:00 - 10:00 **Gilad PEREZ**
Flavor physics (II)

10:00 - 10:15 **Discussion**

10:15 - 10:45 --- Coffee Break ---

10:45 - 11:45 **Abdelhak DJOUADI**
Higgs Physics (III)

11:45 - 12:00 **Discussion**

12:00 - 14:30 --- Lunch Break ---

14:30 - 15:30 **Pilar HERNANDEZ**
Neutrino physics (II)

15:30 - 15:45 **Discussion**

15:45 - 16:15 --- Coffee Break ---

16:15 - 17:15 **Gilad PEREZ**
Flavor physics (III)

17:15 - 17:30 **Discussion**

Thursday, 13 June 2013 (Room:Leonardo da Vinci Building Main Lecture Hall)

09:00 - 10:00 **Gilad PEREZ**
Flavor physics (IV)

10:00 - 10:15 **Discussion**

10:15 - 10:45 --- Coffee Break ---

10:45 - 11:45 **Keith ELLIS**
QCD, top and the LHC (III)

11:45 - 12:00 **Discussion**

12:00 - 14:30 --- Lunch Break ---

14:30 - 15:30 **Abdelhak DJOUADI**
Higgs Physics (IV)

15:30 - 15:45 **Discussion**

15:45 - 16:15 --- Coffee Break ---

16:15 - 17:15 **Pilar HERNANDEZ**
Neutrino physics (III)

17:15 - 17:30 **Discussion**

Friday, 14 June 2013 (Room:Leonardo da Vinci Building Main Lecture Hall)

09:00 - 10:00 **Pilar HERNANDEZ**
Neutrino physics (IV)

10:00 - 10:15 **Discussion**

10:15 - 10:45 --- Coffee Break ---

10:45 - 11:45 **Keith ELLIS**
QCD, top and the LHC (IV)

11:45 - 12:00 **Discussion**

12:00 - 14:30 --- Lunch Break ---

14:30 - 15:30 **Oleg RUCHAYSKIY / EPFL/LPPC, Lausanne, Switzerland**
New physics without a new energy scale (I)

15:30 - 15:45 **Discussion**

15:45 - 16:15 --- Coffee Break ---

16:15 - 17:15 **Alejandro IBARRA / TUM, Munich, Germany**
Dark matter (I)

17:15 - 17:30 **Discussion**

Saturday, 15 June 2013 (Room:Leonardo da Vinci Building Main Lecture Hall) (Saturday)

09:00 - 10:00 **Mikhail SHAPOSHNIKOV / EPFL, Lausanne, Switzerland**
Nature versus naturalness - Special Lecture

10:00 - 10:15 **Discussion**

10:15 - 10:45 --- Coffee Break ---

10:45 - 11:45 **Alejandro IBARRA**
Dark matter (II)

11:45 - 12:00 **Discussion**

12:00 - 14:30 --- Lunch Break ---

14:30 - 22:30 --- EXCURSION ---

Monday, 17 June 2013 (Room:Leonardo da Vinci Building Main Lecture Hall)

09:00 - 10:00 **Steve MARTIN / Northern Illinois University, USA**
Supersymmetry and the LHC (I)

10:00 - 10:15 **Discussion**

10:15 - 10:45 --- Coffee Break ---

10:45 - 11:45 **Oleg RUCHAYSKIY**
New physics without a new energy scale (II)

11:45 - 12:00 **Discussion**

12:00 - 14:30 --- Lunch Break ---

14:30 - 15:30 **Alejandro IBARRA**
Dark matter (III)

15:30 - 15:45 **Discussion**

15:45 - 16:15 --- Coffee Break ---

16:15 - 17:15 **Michele REDI / INFN, Firenze**
Compositeness, extra dimensions and the LHC (I)

17:15 - 17:30 **Discussion**

Tuesday, 18 June 2013 (Room:Leonardo da Vinci Building Main Lecture Hall)

09:00 - 10:00 **Alejandro IBARRA**
Dark matter (IV)

10:00 - 10:15 **Discussion**

10:15 - 10:45 --- Coffee Break ---

10:45 - 11:45 **Oleg RUCHAYSKIY**
New physics without a new energy scale (III)

11:45 - 12:00 **Discussion**

12:00 - 14:30 --- Lunch Break ---

14:30 - 15:30 **Steve MARTIN**
Supersymmetry and the LHC (II)

15:30 - 15:45 **Discussion**

15:45 - 16:15 --- Coffee Break ---

16:15 - 17:15 **Michele REDI**
Compositeness, extra dimensions and the LHC (II)

17:15 - 17:30 **Discussion**

Wednesday, 19 June 2013 (Room:Leonardo da Vinci Building Main Lecture Hall)

09:00 - 10:00 **Oleg RUCHAYSKIY**
New physics without a new energy scale (IV)

10:00 - 10:15 **Discussion**

10:15 - 10:45 --- Coffee Break ---

10:45 - 11:45 **Robert CALDWELL / Dartmouth College, USA**
Cosmology and particle physics (I)

11:45 - 12:00 **Discussion**

12:00 - 14:30 --- Lunch Break ---

- 14:30 - 15:30** Urs WIEDEMANN / *CERN, Geneva, Switzerland*
Quark-Gluon plasma at the LHC (I)
- 15:30 - 15:45** Discussion
- 15:45 - 16:15** --- Coffee Break ---
- 16:15 - 17:15** Michele REDI
Compositeness, extra dimensions and the LHC (III)
- 17:15 - 17:30** Discussion

Thursday, 20 June 2013 (Room:Leonardo da Vinci Building Main Lecture Hall)

- 09:00 - 10:00** Robert CALDWELL
Cosmology and particle physics (II)
- 10:00 - 10:15** Discussion
- 10:15 - 10:45** --- Coffee Break ---
- 10:45 - 11:45** Urs WIEDEMANN
Quark-Gluon plasma at the LHC (II)
- 11:45 - 12:00** Discussion
- 12:00 - 14:30** --- Lunch Break ---
- 14:30 - 15:30** Michele REDI
Compositeness, extra dimensions and the LHC (IV)
- 15:30 - 15:45** Discussion
- 15:45 - 16:15** --- Coffee Break ---
- 16:15 - 17:15** Steve MARTIN
Supersymmetry and the LHC (III)
- 17:15 - 17:30** Discussion

Friday, 21 June 2013 (Room:Leonardo da Vinci Building Main Lecture Hall)

- 09:00 - 10:00** Robert CALDWELL
Cosmology and particle physics (III)
- 10:00 - 10:15** Discussion
- 10:15 - 10:45** --- Coffee Break ---
- 10:45 - 11:45** Urs WIEDEMANN
Quark-Gluon plasma at the LHC (III)

11:45 - 12:00 **Discussion**

12:00 - 14:30 --- Lunch Break ---

14:30 - 15:30 **Steve MARTIN**
Supersymmetry and the LHC (IV)

15:30 - 15:45 **Discussion**

15:45 - 16:15 **CLOSING REMARKS**