

# LC10 - New Physics: complementarities between direct and indirect searches

Corso di Formazione INFN  
November 30th - December 3rd, 2010  
INFN Frascati National Laboratories  
<http://www.lnf.infn.it/conference/lc10/>

## First Bulletin

### Background

This workshop belongs to a series initiated a few years ago in order to foster and maintain the interest of the Italian and International community in the physics possibilities provided by a future Linear Collider (LC) project. Previous workshops have been held in Florence (2007, '[ILC Physics in Florence](#)'), LNF (2008, '[LC08 in Frascati](#)') and Perugia (2009, <http://www.lnf.infn.it/lc09>), in the context of the activities of the [Italian particle physics community](#) involved in theoretical and phenomenological studies of the physics potential of a future TeV scale LC.

After the successful start of the LHC and the wealth of interesting data already pouring in from the experiments, in the next few years it will become more and more important to understand the full physics potential of an  $e^+e^-$  LC (along with its  $e-\gamma$  and  $\gamma-\gamma$  options). The insights that this kind of physics will yield would in fact be extremely valuable for our understanding of fundamental matter and interactions.

### This Event

The LC10 Workshop will take place in Frascati, at the INFN National Laboratories (LNF) near Rome, and will explore the connections of the LHC and a LC in 'direct searches' of new physics between themselves, to astroparticle physics and cosmology as well as other 'indirect' searches, like those carried out through very precise electroweak measurements.

This meeting will in particular be devoted to review and update the status of the theory, phenomenology and some experimental issues for both leptonic and photonic collisions at the TeV scale. Topics include: Higgs, Top and QCD Physics, Electroweak Interactions, Vector- Boson Fusion (including Photon-Photon Collisions), Tools, Supersymmetry and other Beyond the Standard Model Theories, Machine and Detector Options. In addition, there will be a dedicated session to review Dark Matter searches and to discuss their connection with the LHC and LC projects.

The LC10 Workshop will be held together with the 2010 Bruno Touschek Memorial Lectures, which will take place on November 30<sup>th</sup>, see [http://www.lnf.infn.it/conference/btml2010/Memorial\\_Lecture/Welcome.html](http://www.lnf.infn.it/conference/btml2010/Memorial_Lecture/Welcome.html),

and will continue in the next three days, December 1<sup>st</sup>-3<sup>rd</sup>. It will be structured in longer (plenary) general talks and shorter (parallel) working group presentations and discussions, the latter taking place in the afternoon of December 1<sup>st</sup>.

We invite and welcome working group presentations particularly from early stage researchers. Please propose your contribution during registration.

### **Preliminary List of Invited Speakers**

A.G. Akeroyd (NExT Inst., Southampton U.)  
J.J. Blaising (LAPP, Annecy)(\*)  
M. Cirelli (CERN)  
F. Coradeschi (INFN Firenze)  
M. Dasgupta (Manchester U.)  
R.M. Godbole (Indian Inst. Sci., Bangalore & Tata Inst., Mumbai)  
F. Jegerlehner (Humboldt U., Berlin)  
M. Krawczyk (Warsaw U.)  
N. Mahmoudi (CERN & LPC, Clermont-Ferrand)  
A. Masiero (Padova U. & INFN Padova)  
P. Mastrolia (Salerno U.)  
S. Matsumoto (IPMU, Tokyo)  
P. Picozza (Roma II U. and INFN Roma II)  
J. Sola (ECM & ICC, Barcelona U.)  
T. Teubner (Liverpool U.)  
A. Teixeira (LPC, Clermont-Ferrand)  
K. Tsumura (Taiwan U.)  
D. Veberic (Nova Gorica U.)  
G. Venanzoni (LNF INFN)

(\*) To be confirmed

### **Registration**

Please register at the LC10 Workshop website. Notice that INFN researchers can be financed for attending this workshop through their locally available FONDI FORMAZIONE.

A list of registered participants will be posted on the workshop website and regularly updated. The deadline for registration is November 15<sup>th</sup>.

### **Transportation**

Provided there will be enough interested participants, a shuttle bus from Fiumicino airport (FCO) to the Frascati National Laboratories will be organised in order to pick up participants arriving on Tuesday (November 30<sup>th</sup>). The bus will leave FCO between 1:30 and 2 pm and will take participants directly to the Laboratories. Further details will be posted on the web side.

### **Accommodation**

We have reserved a number of rooms at the hotel Villa Mercede, located 3 km uphill from the Laboratories, on Via Tuscolana, 20, 00044 Frascati, Tel. +39-06-942 4760, Fax +39-06-941 6461, e-mail [mail@villamercede](mailto:mail@villamercede.com), website <http://www.villamercede.com/>.

A courtesy bus will take participants back and forth from the Laboratories to the hotel. Procedures to follow for booking at Villa Mercede as well as a list of other accommodation possibilities are given on the workshop website.

### **Programme**

A draft programme of the LC10 Workshop will be posted at the workshop website, where it will be regularly updated.

### **Second Bulletin**

The second bulletin with a preliminary programme will be sent out (and posted on our website) in two/three weeks from now.

### **Conveners**

Elena Accomando (NExT Inst., Southampton U. & RAL)

Marco Battaglia (CERN & Santa Cruz U.)

Francesca Borzumati (Tohoku U.)

Carlo Carloni Calame (NExT Inst., Southampton U.)

Denis Comelli (INFN Ferrara)

Gennaro Corcella (SNS, Pisa & Centro E. Fermi, Roma)

Aldo Deandrea (IPN, Lyon)

Giuseppe Degrassi (Roma III and INFN Roma III)

Ezio Maina (Torino and INFN Torino)

Massimo Passera (INFN Padova)

Fulvio Piccinini (INFN Pavia)

Marco Ricci (INFN LNF)

### **Organizing Committee**

Stefania De Curtis (INFN Firenze)

Stefano Moretti (NExT Inst., Southampton U. & RAL)

Giulia Pancheri (INFN LNF)

Orlando Panella (INFN Perugia)

Marcello Piccolo (INFN LNF)

### **Local Organizing Committee**

Giulia Pancheri, Marcello Piccolo & Marco Ricci (INFN LNF)

### **Secretariat**

Maria Cristina D'Amato (INFN LNF)