Theory Challenges in the Precision Era of the Large Hadron Collider

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2023 August 28th - 2023 October 13th

Schedule

- week 1 (28.08-01.09) Kick-Off Conference
- week 2 (04.09-08.09) Precision QCD results
- week 3 (11.09- 15.09) Scattering amplitudes and new algorithms
- week 4 (18.09-23.09) Resummation, PDFs and MC developments
- week 5 (25.09-30.09) Training week for PhD students
- week 6 (02.10-06.10) Electroweak theory
- week 7 (09.10.-13.10) SMEFT and New Physics

Lectures

- SMEFT predictions for the LHC
 - ⇒ Ilaria Brivio
- Electroweak Precision Physics
 - ⇒ Stefan Dittmaier
- Progress in multi-loop calculations
 - ⇒ Lance Dixon
- From resummations to parton showers
 - ⇒ Fmanuele Re
- QCD hard scattering processes at the LHC
 - ⇒ George Sterman
- The proton structure
 - ⇒ Maria Ubiali













Lectures

Timetable:

| | Monday | Tuesday | Wednesday | Thursday | Friday |
|---------------|--------------------------|----------------------|--------------------------|---------------------|------------------------|
| 09:00 - 10.30 | Dittmaier (lecture 1) | Dixon (lecture 2) | Dittmaier (lecture 3) | Sterman (lecture 1) | Sterman (lecture 3) |
| 11:00 - 12.30 | Brivio | Brivio | Brivio | Dixon | Ubiali |
| | (lecture 1) | (lecture 2) | (lecture 3) | (lecture 4) | (lecture 1) |
| 14:00 - 15.30 | Dixon | Dittmaier | Dittmaier | Sterman | Sterman |
| | (lecture 1) | (lecture 2) | (lecture 4) | (lecture 2) | (lecture 4) |
| 16:00 - 17.30 | Re | Re | Dixon | Brivio | Ubiali |
| | (lecture 1) | (lecture 2) | (lecture 3) | (lecture 4) | (lecture 2) |

Practicalities

- Opening hours:
 - 7:30 20:00, Monday Friday
 - The building is alarmed between 21:00 6:00
 - In all other cases use your badge
 - Main gate is closed between 20:00 7:00 (and weekends)
 - \Rightarrow Use your badge to open
- Internet: use Eduroam
 - In case not having: sign up for UniFi network at Annalisa (room: 101)
- Printing: easiest: use a USB key, print at printer
 - Network printing: ask Alessio (room: 102)



Practicalities

- Yellow RFID tag: key to coffee machines
- Badge: entering and leaving the facilities
- Coffee breaks:
 - **—** 10:30 **-** 11:00
 - **—** 15:30 16:00
- Lunch is served at 13:00 (sharp)
- Wear your badge
- When leaving put your badge into the plexi box

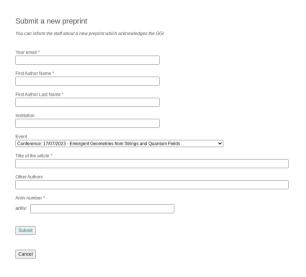


Acknowledging GGI

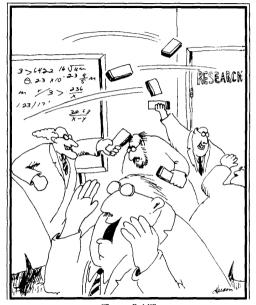
- [XXX] is grateful to the Galileo Galilei Institute where the main part of this work was done for warm hospitality.
- [XXX] is grateful to the Galileo Galilei Institute for hospitality and support during the scientific program on "Theory Challenges in the Precision Era of the Large Hadron Collider", where part of this work was done.

Acknowledging GGI

After the workshop you can put a link to your work in the preprint section of the GGI webpage



Enjoy your stay!



"Eraser fight!"