

## Rigorous Quantum Field Theory in the LHC era

September 21 - October 1, 2011

Organized by Christian Jäkel, Christoph Kopper, Gandalf Lechner

- **Wednesday, September 21, 2011**

**10:00 – 11:00: Detlev Buchholz**, University of Göttingen

*Infrared Problems and Sector Analysis. Old Wisdom and Recent Progress*

**11:00 – 11:30:** coffee break

**11:30 – 12:30: Riccardo Guida**, Institut de Physique Théorique, CEA Saclay,

*All-order uniform bounds for the massless Euclidean  $\phi_4$ -Theory*

**12:30 – 14:30:** lunch break

**14:30 – 15:30: Abdelmalek Abdesselam**, University of Virginia

*Massless quantum field theory over the reals and  $p$ -adics, a probabilistic point of view (Part I)*

- **Thursday, September 22, 2011**

**10:00 – 11:00: Abdelmalek Abdesselam**, University of Virginia

*Massless quantum field theory over the reals and  $p$ -adics, a probabilistic point of view (Part II)*

**11:00 – 11:30:** coffee break

**11:30 – 12:30: Jacques Magnen**, CPHT Polytechnique and CNRS

*TBA*

**12:30 – 14:30:** lunch break

**14:30 – 15:30: Karl-Henning Rehren**, University of Göttingen

*AdS-CFT and the renormalization of interactions of fields with continuous mass*

- **Friday, September 23, 2011**

**10:00 – 11:00: Yves Sirois**, LLR Polytechnique and CNRS

*Higgs Boson(s) and TeV Scale Physics at the LHC*

**11:00 – 11:30:** coffee break

**11:30 – 12:30: Andre Hoang**, University of Vienna

*Soft-Collinear Effective Theory - a quantum field theory for jets at colliders*

**12:30 – 14:30:** lunch break

**14:30 – 15:30: Emery Sokatchev**, University of Savoy and CERN

*Hidden symmetries of scattering amplitudes*

**17:00 – 18:00: Erwin Schrödinger Lecture: Arthur Jaffe**, Harvard University

*The Physics and Mathematics of Quantum Fields*

- **Monday, September 26, 2011**  
**10:00 – 11:00: Stefan Weinzierl**, University of Mainz  
*Precision calculations for the LHC*  
**11:00 – 11:30:** coffee break  
**11:30 – 12:30: Wojciech Dybalski**, TU Munich  
*Inclusive cross-sections in relativistic and non-relativistic QED*  
**12:30 – 14:30:** lunch break  
**14:30 – 15:30: Alessandro Pizzo**, UC Davis  
*Solution of the Infrared Catastrophe Problem in non-relativistic QED*  
**15:30 – 16:30: Claudio Dappiaggi**, University of Pavia  
*On the quantization of Maxwell's equations in curved space-times*
- **Tuesday, September 27, 2011**  
**10:00 – 11:00: Pronob Mitter**, University of Montpellier  
*On the continuum limit of a critical lattice field theory*  
**11:00 – 11:30:** coffee break  
**11:30 – 12:30: Thomas Chen**, University of Texas at Austin  
*Mean field limits for interacting Bose gases and the Cauchy problem for the Gross-Pitaevskii hierarchies*  
**12:30 – 14:30:** lunch break  
**14:30 – 15:30: Chris Fewster**, University of York  
*What makes a theory of physics the same in all spacetimes ?*  
**15:30 – 16:30: Henning Bostelmann**, University of York  
*Characterization of Local Operators in Factorizing Scattering Models*
- **Wednesday, September 28, 2011**  
**10:00 – 11:00: Jonathan Dimock**, University of New York State  
*The renormalization group according to Balaban*  
**11:00 – 11:30:** coffee break  
**11:30 – 12:30: Pronob Mitter**, University of Montpellier  
*Self-avoiding walks and rigorous renormalization group analysis*  
**12:30 – 14:30:** lunch break  
**14:30 – 15:30: Ugo Moschella**, University of Insubria  
*Tachyons in the de Sitter universe*
- **Thursday, September 29, 2011**  
**10:00 – 11:00: Roberto Longo**, University of Rome "Tor Vergata"  
*Thermal States in CFT and Boundary QFT on the Interior of the Lorentz Hyperboloid*  
**11:00 – 11:30:** coffee break  
**11:30 – 12:30: Jacques Bros**, Institut de Physique Théorique, CEA Saclay  
*Two-point functions of interacting field theories in de Sitter spacetime and the production of unstable modes at small coupling*  
**12:30 – 14:30:** lunch break  
**14:30 – 15:30: Henri Epstein**, IHES  
*Hypergeometric identities from QFT on Anti-de Sitter space-time*

All lectures take place in the ESI Boltzmann Lecture Hall