

# BOUND STATES

## In strongly coupled systems

March 12, 2018 - March 16, 2018 • Florence, Italy

**Galileo Galilei Institute for Theoretical Physics**  
*Centro Nazionale INFN di Studi Avanzati*

### TOPICS

- Baryons, mesons, glueballs, and exotics in QCD.
- Bound states in quantum field theory.
- Amplitudes for strong interacting theories.
- Excited state spectroscopy.
- Compositeness beyond the standard model.
- Experimental detection of bound states.

### ABSTRACT

The understanding of strongly coupled systems is one of the most challenging problems in particle physics.

The strong interactions between the quarks, as well as their confinement, pose substantial challenges. Especially, this makes the study of hadrons as composite objects very difficult.

At higher energies, the Standard Model gives an extremely economical formulation of the electroweak symmetry breaking, but does not explain why the Higgs boson should be light. One possibility is that the Higgs boson might be a bound state of a new strongly interacting sector slightly above the weak scale. Its composite nature would solve the hierarchy problem.

Although the hadron and the Higgs sectors are realized at very different energy scales, the strong interacting dynamics have a number of similarities. The aim of this workshop is to gather together experts from low-energy QCD and the BSM communities, in order to learn from each other about tools and methods to make progress in their respective fields.

**APPLICATION  
DEADLINE:**  
Feb. 28, 2018

### ORGANIZERS

**C. Fischer (JLU Giessen)**  
christian.fischer@theo.physik.uni-giessen.de

**A. Maas (Graz U.)**  
axel.maas@uni-graz.at

**F. Piccinini (INFN Pavia)**  
fulvio.piccinini@pv.infn.it

**A. Pilloni (JLab)**  
pillaus@jlab.org

**A.D. Polosa (Sapienza U. and INFN Roma 1)**  
antonio.polosa@roma1.infn.it

**A. Szczepaniak (JLab and Indiana U.)**  
aszczepa@indiana.edu



**Program and abstract submission on:** <https://www.ggi.infn.it/showevent.pl?id=286>