Contribution ID : **6** Type : **plenary talk**

Modelling glueballs

Friday, 3 June 2016 10:20 (0:40)

Collaboration

Abstract content

Glueballs, i.e. bound states of gluons, were predicted since the early days of Quantum Chromodynamics. They are expected to exist because gluons interact strongly with themselves ('gluons shine in their own light'). Indeed, within Lattice QCD a full spectrum of glueballs has been obtained. The lightest glueball is predicted to be a scalar state and has a mass about 1.7 GeV: as a consequence, intensive research concentrated on the resonances $f_0(1500)$ and $f_0(1710)$ as possible glueball candidates. However, for other quantum numbers, the situation is much less clear: future experimental results and theoretical work are needed in order to identify candidates and in order to study their decay properties. In this talk, we review the theoretical status of glueball's research: different models are compared, both for what concerns the scalar glueball and the other quantum numbers. The role of mixing of glueballs with ordinary quark-antiquark states is addressed. Perspectives for future research on this important subject of hadronic physics are described.

Primary author(s) : GIACOSA, Francesco (UJK Kielce)

Presenter(s) : GIACOSA, Francesco (UJK Kielce)

Session Classification : Plenary Session