



**Laboratório de Instrumentação e  
Física Experimental de Partículas**

## **LIP Seminar**

Thursday, 21 of October 2021, 11h30

# Higgs pair production at the LHC: a unique investigation of the electroweak symmetry breaking

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The current description of the electroweak symmetry breaking relies on a Higgs field associated with an additional potential term in the SM Lagrangian. The discovery of the Higgs boson at the LHC was the first milestone to confirm this theory, allowing to determine one of the two free parameters. Since then, most of the predicted couplings of this boson to SM particles have been measured, and are in excellent agreement with the theoretical predictions. Nowadays, more attention has been raised on measuring the second parameter: the Higgs self-interaction. In this regard, the Higgs pair production is particularly sensitive to this coupling, while presenting a stimulating challenge due to the limited statistics available. In this talk, I present recent results from the ATLAS collaboration on measurements of HH production as predicted by the Standard Model and its possible enhancement through coupling modification or with the search for beyond-SM physics involving resonances producing HH pairs.

**Location: Videoconference - Zoom**

**<https://indico.lip.pt/event/1059/>**

**Connection details**

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