



Contribution ID: 120

Type: Oral presentation using Zoom

## H to hh decay in extended Higgs sectors with a nearly alignment scenario

*Thursday, 28 October 2021 10:20 (20 minutes)*

Searches for extra Higgs bosons are quite important for a direct test of models with extended Higgs sectors. On the other hand, recent LHC data indicates that properties of the discovered Higgs boson are consistent with the SM Higgs boson within the error.

This favors a nearly alignment scenario in models with extended Higgs sectors, where the discovered Higgs boson couplings are almost the same as those of the SM Higgs boson at tree level.

We show that in such an alignment scenario the decay branching ratio of a heavy Higgs boson into the SM-like Higgs bosons can significantly be modified at one-loop level

as compared with the tree level prediction. In particular, we discuss two Higgs doublet models as an important example.

### 1st preferred time slot for your oral presentation

13:00-15:00 JST (6:00-8:00 CEST, 0:00-2:00 EDT, 21:00-23:00 PDT)

### 2nd preferred time slot for your oral presentation

15:30-17:30 JST (8:30-10:30 CEST, 2:30-4:30 EDT, 23:30-1:30 PDT)

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**Session Classification:** F-1: Higgs properties

**Track Classification:** Parallel sessions: Topical Groups: Session F: Higgs properties