Contribution ID: **409** Type: **not specified**

Test of CP Invariance in Higgs Boson Vector-Boson-Fusion Production in the H → γγ Channel using 165 fb-1 ATLAS Run-3 data

Thursday, 30 October 2025 14:40 (20 minutes)

A test of CP invariance in Higgs boson production via vector-boson fusion has been performed in the H → γγ channel using 165 fb-1 ATLAS Run-3 pp collision data at $\sqrt{s}$=13.6 TeV. The optimal observable is used to probe the CP structure of interactions between the Higgs boson and electroweak gauge bosons, as described by an effective field theory. Expected constraints on the $c_{H\tilde{W}}$, which describes the strength of the CP-odd component in the coupling between the Higgs boson and the electroweak gauge bosons, have been derived. Around 30% of improvement is achieved compared to the expected results from full Run2 analysis.

Primary author: WANG, Shudong (高能所)

Presenter: WANG, Shudong (高能所)

Session Classification: Parallel 2

Track Classification: ATLAS