Contribution ID : **267** Type : **Oral presentation**

Searches for invisible decay modes of the Higgs boson with the CMS detector

Friday, 4 July 2014 12:45 (15)

A search for Higgs boson invisible decay modes has been carried out in events where the Higgs boson is produced in association with a Z boson as well as through Vector Boson Fusion. In the associated production search, electron, muon and b-quark pair decay modes of the Z-boson are considered. The analyses are based on pp collision data collected with the CMS detector at the LHC collider at centre-of-mass energies of 7 and 8 TeV, corresponding to integrated luminosities of 5/fb and 20/fb, respectively. No evidence of a signal has been found and upper limits on the invisible branching ratio are obtained and interpreted in a Higgs portal model of dark matter interactions.

Summary

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Session Classification : BEH Physics

Track Classification : Brout-Englert-Higgs physics