

# Search for invisible decays of a Higgs boson produced in association with a Z boson in ATLAS

*Thursday, 15 August 2013 14:00 (25 minutes)*

Various extensions of Standard Model predict possible decays to invisible particles of the Higgs boson recently discovered at the Large Hadron Collider. This presentation will report results of a direct search for invisible decays of Standard Model-like Higgs boson which is produced in association with a Z boson, using the 4.7 fb<sup>-1</sup> of data at  $\sqrt{s} = 7\text{TeV}$  and 20.3fb<sup>-1</sup> of data at  $\sqrt{s} = 8\text{TeV}$  recorded by the ATLAS detector. This contribution will report ATLAS limits on the branching fraction for the Higgs boson decays to invisible particles at  $m_{\text{H}} = 125\text{ GeV}$ . Limits will be also presented for the cross section times the branching fraction of a possible additional Higgs-like boson decaying to invisible particles over the mass range  $115\text{ GeV} < m_{\text{H}} < 300\text{ GeV}$ .

## APS member ID

61140354

**Primary author:** XU, Lailin (University of Michigan)

**Presenter:** XU, Lailin (University of Michigan)

**Session Classification:** Electroweak Symmetry Breaking and the Higgs Sector

**Track Classification:** Electroweak Symmetry Breaking and the Higgs Sector