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## Exploring Higgs Boson Properties: Insights from the ATLAS Group at LNF

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Since the discovery of the Higgs boson, the ATLAS group at LNF has been studying its properties, particularly in the four-lepton decay channel. Known as the “golden channel,” this process played a crucial role in the discovery of the Higgs boson in 2012 and continues to be one of the primary final states for precise measurements of its properties, such as mass, spin/CP, and couplings with other Standard Model (SM) particles. These studies aim also to identify possible deviations from the SM and signs of New Physics. The state-of-the-art research on the Higgs boson in the four-lepton channel will be discussed, focusing on studies conducted by the LNF group, along with an outlook on future prospects.

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