Contribution ID: **155** Type: **Oral Presentation**

Research progress in the H⟶ZΖ^(*)⟶τ⁺ τ⁻ l⁺l⁻ decay channel

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Abstract content
   (Max 300 words)

The Higgs to ZZ^(*) to l⁺l⁻l⁺l⁻ decay channel has good signal to background ratio and can be used to reconstruct the Higgs invariant mass with quite good resolution for an intermediate mass range Higgs (m_Z < m_H < 2m_Z). This makes the ZZ^(*) channel one the most relevant channels to study at the LHC, where it has been found that m<sub>H<sub>≈125 GeV . Although the Higgs to ZZ^(*) decay channel played an important role in this discovery, the decay leptons considered excluded Z bosons decaying into τ leptons. Reasons for this lie in the hard-to-detect hadronic or leptonic τ decays. A study which includes Z decaying into τ is beneficial to completing the picture of the Higgs search, particularly in the statistically limited vector-boson-fusion like search. Preliminary results of the search for Higgs channel H⟶ZZ^(*)⟶τ⁺ τ⁻ l⁺l⁻, (l = e or μ) will be presented and discussed.

Apply to be
 considered for a student
   award (Yes / No)?

No

Level for award
 (Hons, MSc,
   PhD)?

MSc

Main supervisor (name and email)
and his / her institution

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Would you like to <br> submit a short paper <br> for the Conference
 Proceedings (Yes / No)?

No

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