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Application of semi-supervision learning for the search of new resonances decaying to $Z\gamma$ with topological features

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Deep neural networks have the ability to learn from highly complex data and discover non-linear feature combinations. This makes them a suitable tool to explore the high volumes of data in HEP. This study explores the ability of semi-supervised learning in conjunction with deep neural networks to extract signal from the background in the $Z\gamma$ final state using the Monte Carlo simulated signal samples for 139 fb^{-1} of integrated luminosity for Run 2, collected at the LHC. The approach is adopted with the sole intention of calculating the limit on the production of Higgs-like to $Z\gamma$ where the significance of the signal is maximum.

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

Yes

Level for award;(Hons, MSc, PhD, N/A)?

PhD

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