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## Search for a new boson by studying the $Z(\ell\ell) + \text{photon}$ final state

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The discovery of the Higgs boson opened up possibilities for searches Beyond the Standard Model. During the analysis of the run 1 data, it was observed that there were a number of features in the data that can't be explained by the Standard Model.

One of the models to explain the features is a Heavy-Scalar model where a heavy scalar decays into a Higgs boson and missing transverse energy. The search uses a three body final state where the Higgs boson decays into a Z boson, decaying into di-electron or di-muons, and a photon. In this study fake missing transverse energy is suppressed using multivariate analysis.

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