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## Strategy for an early observation of the $ZZ^{(*)}$ di-boson production in four-lepton final states

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The study of the production of two Z bosons at the TeV scale constitutes an important test of the Standard Model and it is a necessary step towards the discovery of new physics and new particles like the Higgs boson. We investigate the CMS potential for the observation and study of  $pp \rightarrow ZZ \rightarrow 4l$  reaction at LHC center of mass energies, using fully simulated signal and background samples. It is shown that these processes are accessible with early CMS data. Data driven methods are developed for the background determination.

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