

Measurement of total charm cross-section and reconstruction of the Higgs mass peak using CMS Open Data

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Our main objective is to measure the total cross-section for inclusive charm production at different proton-proton center of mass energies (0.9, 2.7, 5, 7, 8, and 13 TeV). We measure the charm cross-section through the decays of D mesons. For the 7 TeV analysis, we are using CMS Open Data.

CMS Open Data is data taken by the CMS experiment released to the public via the CERN Open Data portal (<http://opendata.web.cern.ch>). The purpose is to encourage the public or external researchers to conduct their analyses using the original preserved data. CMS Open Data can be used not only for research but also for educational purposes.

One example using CMS Open Data that has been made public is the Higgs to 4 lepton analysis. This simplified analysis rebuilds part of the historic Higgs discovery based on original CMS datasets.

In this talk, a measurement of the total charm cross-section at 7 TeV and a simplified Higgs to 4 leptons analysis using the CMS Open Data will be presented.

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