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Measurement of the visible cross sections for proton-proton collisions at 13 TeV with ALICE at the LHC

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The performance of a particle collider is characterised by the luminosity, that is, the number of collisions produced over time per cross-section. At the LHC, luminosity determination is based on the cross-section of a reference process – the so called visible cross section measured in the van der Meer (VDM) scans.

The measurement of these cross sections is based on the particle detection in the ALICE luminometers , the TZERO (T0) and VZERO (V0) scintillators. These detectors cover both sides of the interaction point. The T0 covers the pseudo-rapidity 4.6 < η < 4.9 (T0A), -3.3 < η < -3.0 (T0C) while the V0 detector covers the pseudo-rapidity 2.8 < η < 5.1 (V0A), -3.7 < η < -1.7 (V0C). In this talk, we will present the measurement of visible cross sections performed with ALICE in the VDM scans during proton-proton collisions at √s = 13 TeV in 2015. Also, an outlook study of the measurements taken during VDM scans in 2016 will be given.

Apply to be
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Yes

Level for award
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PhD

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

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