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Measurement of the inelastic proton - proton cross section at  $\sqrt{s} = 13$  TeV (Article) (Open Access)

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Abstract

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A measurement of the inelastic proton - proton cross section with the CMS detector at a center-of-mass energy of  $\sqrt{s} = 13$  TeV is presented. The analysis is based on events with energy deposits in the forward calorimeters, which cover pseudorapidities of  $-6.6 < \eta < -3.0$  and  $+3.0 < \eta < +5.2$ . An inelastic cross section of  $68.6 \pm 0.5(\text{syst}) \pm 1.6(\text{lumi})$  mb is obtained for events with  $M_X > 4.1$  GeV and/or  $M_Y > 13$  GeV, where  $M_X$  and  $M_Y$  are the masses of the diffractive dissociation systems at negative and positive pseudorapidities, respectively. The results are compared with those from other experiments as well as to predictions from high-energy hadron-hadron interaction models. © 2018, The Author(s).

SciVal Topic Prominence

Topic: cross sections | elastic scattering | scattering amplitude

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California Earthquake Authority

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