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## Results on Total and Elastic Cross Sections in Proton–Proton Collisions at $\sqrt{s} = 200$ GeV Obtained with the STAR Detector at RHIC.

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Bogdan Pawlik for the STAR Collaboration

We report the first results on differential, total and elastic cross sections in proton-proton collisions at the Relativistic Heavy Ion Collider (RHIC) at  $\sqrt{s} = 200$  GeV. The data were obtained with the Roman Pot Detector subsystem of the STAR experiment. The data used for this analysis cover the four-momentum transfer squared ( $t$ ) range  $0.045 \geq -t \leq 0.135$  (GeV/c)<sup>2</sup>. The Roman Pot system was placed downstream of the STAR detector at vertical distance of about  $8\sigma_y$  from the beam and operated during standard data taking. The results include values of the exponential slope parameter ( $B$ ), elastic cross section ( $\sigma_{el}$ ) and the total cross section ( $\sigma_{tot}$ ) obtained by extrapolation of the elastic differential cross section ( $d\sigma/dt$ ) to the optical point at  $-t = 0$  (GeV/c)<sup>2</sup>. The detector setup and analysis procedure are reviewed. All results are compared with the world data.

### Additional comments

**Primary authors:** PAWLIK , Bogdan (Institute of Nuclear Physics PAS); GURYN, Wlodek (Brookhaven National Laboratory)

**Presenter:** PAWLIK , Bogdan (Institute of Nuclear Physics PAS)

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