

XVI International Symposium on Very High Energy Cosmic Ray Interactions  
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## ”Hadron cross sections: from cyclotrons to colliders to cosmic rays”

*Tuesday, 29 June 2010 13:20 (50 minutes)*

Using the Froissart bound as a unifying theme, I will show that the experimental data for hadronic crosssections, from nucleon-nucleon, pion-proton, gamma-p and gamma\*-p, are all consistent with a high energy behavior saturating the Froissart bound, all rising with energy as  $\log^2(s)$ . Using analyticity constraints that tie in very accurate low-energy total cross section measurements for pp and pbar-p scattering, we make very precise predictions for both LHC and cosmic ray energy cross sections.

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**Session Classification:** Hadronic cross sections

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