## **Muoproduction of exotic charmonia at COMPASS**

Friday 29 September 2017 09:00 (25 minutes)

Exotic charmonium-like XYZ states have been targeted by various experiments in the last 15 years, but their nature still is unknown. Photo-(muo)production, is a new promising instrument to study them. COMPASS, a fixed target experiment at CERN, analyzed the full set of the data collected with a muon beam between 2002 and 2011, covering the range from 7 GeV to 19 GeV in the centre-of-mass energy of the photon-nucleon system.

Production of the X(3872) state in the reaction  $\mu^+ N \rightarrow \mu^+ (J/\psi \pi^+ \pi^-) \pi^\pm N'$  has been observed with a statistical significance of around 5  $\sigma$ . The product of the cross section and the branching fraction of the X(3872) decay into  $J/\psi \pi \pi$  is estimated as 71±28(stat)±39(syst) pb.

The results obtained for the production of the  $Z_c^{\pm}(3900)$  will be also reported as well as future perspectives.

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Session Classification: Exotic states and candidates

Track Classification: Exotic states and candidates