

Exclusive production of $\rho^0\rho^0$ pairs in ultrarelativistic heavy ion collisions

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I will present the cross section for exclusive electromagnetic production of two neutral ρ mesons. I will show the predictions for $AA \rightarrow AA\rho^0\rho^0$ reactions for gold-gold collisions at an energy of $\sqrt{s} = 200$ GeV (RHIC) and for lead-lead collisions at an energy of $\sqrt{s} = 5500$ GeV (LHC).

Collisions of heavy ion are a source for high-energy $\gamma\gamma$ collisions. The elementary cross section is calculated with the help of the vector-dominance-model (VDM)-Regge contribution which very nice describes the experimental data at large $\gamma\gamma$ energy. The low-energy $\gamma\gamma \rightarrow \rho^0\rho^0$ cross section is parametrized.

The cross section is calculated by means of two methods: in the equivalent photon approximation and in momentum space. The first approach allows to consider production of mesons in peripheral nuclear collisions.

Finally, my main purpose is comparison of results with realistic charge density with results for monopole form factor. So I will precisely discuss the role of realistic form factor as well as the shape of equivalent photon fluxes.

A part of results was already published in Phys. Lett. **B674** (2009) 92.

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