

Two-proton correlation function for the $pp \rightarrow pp + \eta$ and $pp \rightarrow pp + pions$ reactions

Paweł Klaja^(a) and Paweł Moskal^{(a),(b)} for the COSY-11 collaboration

^(a) Institut für Kernphysik, Forschungszentrum Jülich, D-52425 Jülich, Germany

^(b) Institute of Physics, Jagiellonian University, PL-30-059 Cracow, Poland

For the very first time, the correlation femtoscopy method is applied to a kinematically complete measurement of meson production in the collisions of hadrons. A two-proton correlation function was derived from the data for the $pp \rightarrow ppX$ reaction, measured near the threshold of η meson production. A technique developed for the purpose of this analysis permitted to establish the correlation function separately for the production of the $pp + \eta$ and of the $pp + pions$ systems. The shape of the two-proton correlation function for the $pp\eta$ differs from that for the $pp(pions)$ and both do not show a peak structure opposite to results determined for inclusive measurements of heavy ion collisions.

E-mail:

p.klaja@fz-juelich.de