

$\eta \rightarrow \pi^+ \pi^- \pi^0$ decay with WASA-at-COSY

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In 2008 and 2009 an experiment was carried out with WASA-at-COSY with the purpose of studying η - decays. The η s were produced in the $pd \rightarrow {}^3\text{He} \eta$ reaction at beam kinetic energy 1 GeV and in total approximately $3 \cdot 10^7$ of such events were collected. This data will be used to study the not so rare η decays involving charged pions, like $\eta \rightarrow \pi^+ \pi^- \pi^0$. This decay proceeds mainly via a strong isospin violating contribution, where the decay width is proportional to the quark mass difference squared, $(m_d - m_u)^2$. Preliminary results of the analysis are presented.

Supported by BMBF, Wallenberg Foundation and Uddeholms Forskar-stipendium.

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