Contribution ID: **130** Type: **20 min.**

Charge asymmetry in the process e+e− ⟶ π+π−π0γ

Thursday 18 September 2025 09:50 (20 minutes)

The charge asymmetry in the process $e^+e^- \to \pi^+\pi^-\pi^0\gamma$ is studied taking into account a longitudinal polarization of electrons (positrons) for photons with energies $\omega_\gamma \ll \sqrt{s}$. The asymmetry arises due to interference of amplitudes corresponding to production of pions in states with charge parity odd and charge parity even. One of the contributions to the charge asymmetry is given by the $a_1(1260)$ meson in the intermediate state. Unlike process $e^+e^- \to \pi^+\pi^-\pi^0$, the asymmetry is nonzero even without taking $a_1(1260)$ meson into account. However, taking $a_1(1260)$ meson into account significantly changes the shape of the asymmetry curve. It is shown that the charge asymmetry can reach several tens of percent.

Authors: Prof. MILSTEIN, Alexander (Budker Institute of Nuclear Physics); OBRAZTSOV, Ivan (Budker Institute of Nuclear Physics); Dr RUDENKO, Alexander (Budker Institute of Nuclear Physics)

Presenter: OBRAZTSOV, Ivan (Budker Institute of Nuclear Physics)

Session Classification: Hadron spectroscopy, multiquarks

Track Classification: Hadron spectroscopy, multiquarks