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Exotic meson candidates in COMPASS

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The COMPASS experiment at the SPS-enjected M2 beam line at CERN is a major player in the field of light-meson spectroscopy. The two-stage spectrometer provided a good acceptance and covered a wide kinematic range for charged and neutral particles, allowing to access a wide range of final states. Operating with liquid hydrogen as well as heavier nuclear targets and a negative hadron beam at 190 GeV/c, the diffractively produced excited states π_J, a_J and K_J can be accessed.

The talk will be focused on the signal of the lightest hybrid candidate with spin-exotic quantum numbers $J^{PC} = 1^{-+}$ measured at COMPASS and final states in which we can observe it such as $\pi^-\pi^+\pi^-$, $\eta^{(\prime)}\pi^-$, $\omega\pi^-\pi^0$, $\pi^-\pi^+\pi^-\eta$. In addition, we highlight our new results of the $K^-\pi^+\pi^-$ final state.

Collaboration

COMPASS

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