

KAON INTERFEROMETRY AT KLOE/KLOE-2

Eryk Czerwiński

Jagiellonian University, Krakow, Poland

A ϕ -factory offers the possibility to select pure kaon beams: neutral kaons from $\phi \rightarrow K_S K_L$ are produced in pairs and the detection of a K_S (K_L) tags the presence of a K_L (K_S), the same holds for charged kaons. This allows to perform precise measurement of kaon properties.

Another advantage of a ϕ -factory consists in the fact that the neutral kaon pairs are produced in a pure quantum state ($J^{PC} = 1^{--}$), which allows to investigate CP and CPT symmetries via quantum interference effects, as well as the basic principles of quantum mechanics.

A review of the results obtained via quantum interferometry by the KLOE experiment at the DAΦNE e^+e^- collider will be presented together with ongoing analyses and prospects for KLOE-2 project.