XIII International Conference on New Frontiers in Physics 2024

XIII International Conference on New Frontiers in Physics 25 Aug - 4 Sep 2024, OAC, Kolymbari, Crete, Greec

Contribution ID: 103

Type: Talk

Searches of exotic decays with NA62 in beam-dump mode

Tuesday 3 September 2024 11:40 (20 minutes)

The NA62 experiment at CERN took data in 2016–2018 with the main goal of measuring the $K^+ \rightarrow \pi^+ \nu \bar{\nu}$ decay. In this talk we report on the search for visible decays of exotic mediators from data taken in "beamdump" mode with the NA62 experiment. NA62 can be run as a "beam-dump" experiment by removing the kaon production target and moving the upstream collimators into a "closed" position. In this configuration 400°GeV protons are dumped on an absorber and New Physics (NP) particles, including dark photons, dark scalars and axion-like particles, may be produced and reach a decay volume beginning 80°m downstream of the absorber. More than 10¹⁷ protons on target have been collected in "beam-dump" mode by NA62 in 2021. Recent results from analysis of this data, with a particular emphasis on Dark Photon and Axion-like particle Models, are presented. We also report new results on the first NA62 search for long-lived NP particles decaying in flight to hadronic final states based on a blind analysis of a sample of 1.4×10^{17} protons on dump collected in 2021.

Internet talk

Maybe

Is this an abstract from experimental collaboration?

Yes

Name of experiment and experimental site

The NA62 experiment at CERN SPS

Is the speaker for that presentation defined?

Yes

Details

Stefan Ghinescu

The abstract is submitted on behalf of the NA62 Collaboration by A. Romano, chair of the NA62 Conference Committee. If it will be accepted as a talk, a speaker will be appointed as soon as possible.

Authors: ROMANO, Angela (University of Birmingham (GB)); GHINESCU, Stefan Alexandru (Horia Hulubei National Institute of Physics and Nuclear Engineering (RO))

Presenter: GHINESCU, Stefan Alexandru (Horia Hulubei National Institute of Physics and Nuclear Engineering (RO))

Session Classification: High Energy Particle Physics

Track Classification: Main topics: High Energy Particle Physics