

# Status of the BeEST Heavy Neutrino Search Experiment

*martedì 18 giugno 2024 17:30 (2 ore)*

The Beryllium Electron capture in Superconducting Tunnel junctions (BeEST) experiment searches for the signatures of heavy neutrino mass eigenstates by measuring the recoil energy of the Li-7 daughter nucleus from Be-7 electron capture decay. In Phase-II, BeEST has set leading limits on neutrino mixing to a heavy eigenstate in the 100-850 keV mass range using a single superconducting tunnel junction detector. The current Phase-III has expanded the BeEST experiment to a 32-pixel STJ array detector and increased the dose of implanted Be-7. In this poster, we present the status of the BeEST Phase-III and highlight the refined experimental and analytical techniques in Phase-III. We also discuss an improved analysis scheme using pulse shape discrimination enabled by a new continuous data acquisition system.

## Poster prize

No

## Given name

In Wook

## Surname

Kim

## First affiliation

Lawrence Livermore National Laboratory

## Second affiliation

## Institutional email

kim124@llnl.gov

## Gender

Male

## Collaboration (if any)

The BeEST Collaboration

**Autore principale:** KIM, In Wook (Lawrence Livermore National Laboratory)

**Relatore:** KIM, In Wook (Lawrence Livermore National Laboratory)

**Classifica Sessioni:** Poster session and reception 1

**Classificazione della track:** Sterile neutrinos