



Contribution ID: 152

Type: Poster

## The large-angle photon veto system for the NA62 experiment at CERN

*Friday, 25 May 2012 18:41 (0 minutes)*

The branching ratio (BR) for the decay  $K^+ \rightarrow \pi^+ \nu \bar{\nu}$  is a sensitive probe for new physics. The NA62 experiment at the CERN SPS will measure this BR to within about 10%. To reject the dominant background from channels with final state photons, the large-angle vetoes (LAVs) must detect photons with energies as low as 200 MeV with an inefficiency of less than  $10^{-4}$ , as well as provide energy and time measurements with resolutions of  $\sim 10\%$  and 1-ns for 1 GeV photons. The LAV detectors make creative reuse of lead-glass blocks recycled from the OPAL electromagnetic calorimeter barrel. We describe the mechanical design and challenges faced during construction, the development of front-end electronics to allow simultaneous time and energy measurements over an extended dynamic range using the time-over-threshold technique, and the development of an in-situ calibration and monitoring system. Our results are based on test beam data collected using prototypes of the LAV detectors.

### for the collaboration

for the LAV working group of the NA62 Collaboration

**Presenter:** MASSAROTTI, Paolo (Naples University & INFN)

**Session Classification:** PID and Photo Detectors - Poster Session

**Track Classification:** P3 - PID and Photo Detectors