Knowing the $\nu_e$ cross section is crucial for Leptonic CP violation (modulations of $\nu_e$ from $\nu_\mu \to \nu_e$)

Present measurements w. conventional $\nu$ beams limited by syst. in the flux ($\sim$10% norm. error)

→ A new-generation $\nu$ source based on tagging of $e^+$ from $K_{e3}$ decays $K^+ \to e^+ \pi^0 \nu_e$

$\nu_e$ flux proportional to the $e^+$ rate in the tagger

$\nu_e$ flux will NOT depend on hadro-production, $K/\pi$ production ratio, Protons on Target (PoT), 2nd beamline efficiency but only on: the geometrical acceptance of the $e^+$-tagger/$\nu$-detector, the $e^+$ tagger efficiency and the mastering of residual backgrounds. O(1%) systematic error achievable

→ $\nu_e^{CC}$ precision measurement
Proposed technology: **Shashlik** calorimeter (0.5 cm scintillator tiles + 1.5 cm Copper slabs)

Wave **Length Shifting fibers** running along the average $e^+$ direction (i.e. almost perpendicular to the tiles) with $\sim 1$ cm pitch, read-out by small area **Silicon Photo-Multipliers**

**Proposed scheme**

- Full GEANT4 simulation in progress.
- **test-beam with $\pi/e$ beams** planned for e.m. module.
- A **3 m long demonstrator** (**ENUBET**, Enhanced NeUtrino BEams with kaon Tagging) possibly at the **CERN $\nu$ platform** is envisaged.
- A **working group** is forming. Open to interested parties!