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P2.040 High precision neutrino flux measurements with ENUBET

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The challenges of precision neutrino physics (discovery of CP violation and mass hierarchy) require measurements of absolute ν cross sections at the GeV scale with exquisite (1%) precision. Such precision is presently limited to about 10% by the uncertainties on neutrino flux at the source. A reduction of this uncertainty by one order of magnitude can be achieved monitoring the positron production in the decay tunnel originating from the Ke3 decays of charged kaons in a sign and momentum selected narrow band beam. This novel technique enables the measurement of the most relevant cross-sections for CP violation (V_e and V_e^-) with a precision of 1% and requires a special instrumented beam-line. Such non-conventional beam-line will be developed in the framework of the ENUBET Horizon-2020 Consolidator Grant (PI A. Longhin), recently approved by the European Research Council. In this poster, we will present the Project and the early experimental results on ultra-compact calorimeters that can be embedded in the instrumented decay tunnel.