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Future prospects for gamma ray spectroscopy of hypernuclei at Frascati

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High resolution hypernuclear gamma-ray spectroscopy is very useful for a complete understanding of the hyperon-nucleon interaction at low energy. In particular, the precise determination of the strength of the spin-dependent terms of the interaction potential can be assessed experimentally for simple systems like p-shell hypernuclei.

The FINUDA experiment, running at DAFNE, is completely dedicated to hypernuclear physics studies. The apparatus can be upgraded by adding to the present setup the capability of detecting gamma rays emitted during the deexcitation of the produced hypernuclei, without renouncing to its very good figures of momentum resolution and angular acceptance.
FINUDA could become the most complete and performing magnetic spectrometer even dedicated to hypernuclear physics.

The project of integrating high resolution gamma rays detectors inside the FINUDA tracking system will be discussed, considering both the problem of operating Ge detectors inside high magnetic field and in presence of high particles rate and the required mechanical modifications.

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