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Second-order processes: a window into 0nbb decay

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The detection of neutrinoless double beta decay (0nbb) remains elusive in spite of the intense experimental efforts to observe it. Indeed, the estimated half-life of the decay depends on nuclear matrix elements (NMEs) which are highly uncertain. A promising avenue to gain insights on the 0nbb NMEs is to explore related second-order processes in the weak (two-neutrino double-beta decay) and electromagnetic (double-magnetic dipole transitions) sectors. In this presentation I will argue that confronting theoretical predictions with experimental measurements for these two processes can be a powerful tool to reduce the uncertainty on the values of the 0nbb NMEs.

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