



Neutrinoless double beta decay: the nuclear structure ingredient*

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Disagreements between the theoretical predictions of the nuclear matrix elements pertinent to neutrinoless double beta decay have motivated measurements of the valence occupations of protons and neutrons in the ground states of ^{76}Ge and ^{76}Se (parent and daughter, respectively, of said decay). These 'ingredients' are essential to better quantifying the ground-state wave functions of these nuclei, and should assist in firmly calibrating theoretical calculations. We have used single-nucleon adding- and removing-reactions to extract these data. Results from both the proton and neutron transfer reactions show that the Fermi surface is much more diffuse than previous calculations had suggested: the occupation of nucleons from several 'active' orbitals change significantly between the two ground states. Experimental details and results are discussed.

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