## Kathrin Wimmer, Ramón y Cajal researcher at IEM-CSIC, awarded with an ERC Consolidator grant

## ERC CONSOLIDATOR GRANT FOR LISA: LIFETIME MEASUREMENTS WITH SOLID ACTIVE TARGETS

Atomic nuclei are unique quantum systems, consisting of two types of particles, the protons and the neutrons, which interact with each other via the strong interaction and influence each other's motion. This interaction changes the structure of the nucleus depending on the proton-to-neutron ratio and spontaneous symmetry breaking can lead to sudden deformation of the nucleus. The whole nucleus can then be excited in a collective rotational or vibrational motion. Nuclei and their interactions also drive the chemical evolution of the Universe, from the big bang to nucleo-synthesis in stars, super novae, or neutron star mergers. The aim of LISA is to measure the collectivity of very rare atomic nuclei using a novel approach of active target detectors in combination with high-resolution gamma-ray spectroscopy. The results will shed new light on the emergence of deformation in exotic nuclei and contribute to the understanding of the creation of heavy elements in the Universe.