Microscopic description of temperature, pairing and deformation effects in nuclei

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Symmetry-breaking related effects in nuclear systems are studied using various approaches. Finite-temperature Skyrme Hartree Fock Bogoliubov (HFB) model is used to describe the transition from the superfluid to the normal phase in hot nuclei [1]. Effects due to collective excitations are also investigated using finite temperature QRPA [2]. Finally results of the first axially deformed relativistic HFB model will be provided [3].

[1] E. Khan, N. Van Giai, N. Sandulescu, Nucl. Phys. A789 (2007) 94
[2] E. Khan, N. Sandulescu, N. Van Giai, in prep.
[3] J.P. Ebran, E. Khan, D. Pena Arteaga, M. Grasso, D. Vretenar, Proc. Nucl. Structure and Dynamics, Dubrovnik, 2009.