

Abstract Submitted  
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**Amplification of weak interaction by coherent effects in the nucleus**<sup>1</sup> VLADIMIR ZELEVINSKY, Michigan State University, NAFTALI AUERBACH, Tel Aviv University, ALEXANDER VOLYA, Florida State University — Strong interactions between the nucleons in complex nuclei can considerably amplify the effects of weak perturbations. The parity non-conservation in experiments with slow polarized neutrons (scattering and fission) is enhanced by orders of magnitude as a result of high density of neutron resonances and uniformly chaotic nature of compound wave functions. The search for the electric dipole moments (EDM) of atoms is currently performed by several experimental groups. Here one needs a coherent enhancement of simultaneous parity and time-reversal violation in the ground state. The atomic EDM is induced by the nuclear Schiff moment. We discuss possible mechanisms of the enhancement of the Schiff moments by the coherent interaction of quadrupole and octupole degrees of freedom in deformed nuclei and in soft spherical nuclei.

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Vladimir Zelevinsky  
Michigan State University

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