

Abstract Submitted
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Giant Dipole Resonance in light and heavy nuclei beyond selfconsistent mean field theory¹ SIEGFRIED KREWALD, Forschungszentrum Juelich, NIKOLAY LYUTOROVICH, VICTOR TSELYAEV, St.Petersburg State University, Russia, JOSEF SPETH, FRANK GRUEMMER, Forschungszentrum Juelich, PAUL-GERHARD REINHARD, University Erlangen, Germany — While bulk properties of stable nuclei are successfully reproduced by mean-field theories employing effective interactions, the dependence of the centroid energy of the electric giant dipole resonance on the nucleon number A is not. This problem is cured by considering many-particle correlations beyond mean-field theory, which we do within a selfconsistent generalization of the *Quasiparticle Time Blocking Approximation* [1,2]. The electric giant dipole resonances in ^{16}O , ^{40}Ca , and ^{208}Pb are calculated using two new Skyrme interactions. Perspectives for an extension to effective field theories[3] are discussed.

[1] V. Tselyaev et al., Phys.Rev.C**75**, 014315(2007).

[2] N. Lyutorovich et al., submitted to Phys.Rev.Lett.

[3] S. Krewald et al., Prog.Part.Nucl.Phys.**67**, 322(2012).

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