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Giant resonances in ^{40}Ca and ^{48}Ca MASON ANDERS, SHALOM SHLOMO, Cyclotron Institute at Texas A&M University — It is well known that the energies of the compression modes, the isoscalar giant monopole resonance (ISGMR) and isoscalar giant dipole resonance (ISGDR), are very sensitive to the value of the compressibility, K_{NM}. Also the energies of the isovector giant resonances, in particular, the isovector giant dipole resonance (IVGDR), are sensitive to the density dependence of the symmetry energy, J. Furthermore, information on the density dependence of J can also be obtained by studying the isotopic dependence of strength functions, such as the difference between the strength functions of ^{40}Ca and ^{48}Ca. We will present results of fully self-consistent Hartree Fock based random phase approximation calculations of the strength functions and centroid energies E_{CEN} of isoscalar (T = 0) and isovector (T = 1) giant resonances of multipolarities L = 0 - 3 in ^{40}Ca and ^{48}Ca, using a wide range of commonly employed Skyrme type nucleon-nucleon effective interactions. We will discuss the sensitivity of E_{CEN} and of the differences $E_{CEN}(^{48}Ca)$ - $E_{CEN}(^{40}Ca)$ to physical quantities, such as nuclear mater incompressibility coefficient and symmetry energy, associated with the effective nucleon-nucleon interactions and compare the results with available experimental data.

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