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Some Aspects of the Giant- Pairing Vibration[1] A.O. MACCHIAVELLI, R.M. CLARK, Lawrence Berkeley National Laboratory, M. LASKIN, R.F. CASTEN, Yale University — Pair correlations in nucleon motion play a key role in our understanding the excitation spectra of even-A nuclei, odd-even mass differences, rotational moments of inertia, and a variety of other phenomena. It has been predicted that there should be a concentration of strength, with L=0 character, in the high-energy region (10-15 MeV) of the pair-transfer spectrum. This is called the Giant Pairing Vibration (GPV) and is understood microscopically as the coherent superposition of 2p (or 2h) states in the next major shell above the Fermi surface. It is analogous to the giant resonances of nuclear shapes which involve the coherent superposition of ph excitations. The GPV should be populated through pair-transfer reactions, but despite many efforts it has never been identified [2]. In this work, we study the possible role of mixing of bound and unbound levels in making the GPV difficult to observe. We illustrate these effects with a set of toy models that capture the essential physics of the GPV. A more realistic (yet still schematic) calculation is used to estimate 2n-transfer cross sections.

[1] R. A. Broglia and D. R. Bès, Phys. Lett. B 69 129 (1977).
[2] B.Mouginot et al. Phys. Rev. C83 037302 (2011).

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