

## THE IMPORTANCE OF 3:1 RESONANCES IN STELLAR PULSATIONS

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Abstract. The 2:1 resonance between the fundamental and the second overtone modes has received a great deal of attention in the context of Cepheids. It was clearly shown that it causes the Hertzsprung bump progression and brings about the very characteristic observed variation of the Fourier phases with period (Buchler & Goupil, 1984, *Ap.J.*, 279, 394; Klapp, Goupil & Buchler, 1985, *Ap.J.*, 296, 514; Buchler & Kovacs, 1986, *Ap.J.*, 303, 749).

Again the amplitude equation formalism again here we show that the occurrence of a 3:1 resonances can have a very similar effect on the pulsation and, in particular, on the behavior of the Fourier phases as the resonance region is crossed. There does not seem to be any simple way to discriminate in observational data between the two types of resonances. The astrophysical implications of 3:1 resonances are being explored.

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