Resonance effects in axisymmetrically-forced bubble oscillations. "R. Glynn Holt, Eugene H. Trinh (Microgravity Research Group, Mail Stop 183-401, Jet Propulsion Laboratory, 4800 Oak Grove Dr., Pasadena, CA 91109)

Large (.02. $\leq kR \leq$ 0,5) bubbles are levitated in a primary acoustic field, trapped slightly above the pressure nodes. A secondary, amplitude-modulated acoustic field is superimposed to directly force the axisymmetric shape modes at a variety of pressures and frequencies. By satisfying the condition for external resonance (when the external modulation frequent y f_d is nearl y equal to one of the mode-number-dependent shape oscillation frequencies f_n, n = 2.,3,4,..,.) we investigate the possibility of coupling energy into the volume mode via internal resonance (when the volume mode frequency f_0 is nearly an integral multiple of f_n). in particular, wc discuss the viability for such an experiment in 1 g at reduced ambient pressures. Finally, we discuss the. possibility for performing such an experiment in 0g. [Work supported by NASA]

Number of words in abstract: 161

Technical Committee: Physical Acoustics

PACS numbers: 43.25.Y, 43.35.P

Telephone:(818) 393-2531 (G.Holt)

Send notice to G. Holt

Special facility: VCR and monitor