

Abstract Submitted
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Shape Instabilities in Single Bubble Sonoluminescence; Stability, Period Doubling and Bubble Death¹ MOGENS LEVINSEN, Niels Bohr Institute, University of Copenhagen, Denmark — Excitation of shape instabilities represents one route to bubble death in single-bubble sonoluminescence. By extending the theory for excitation of shape instabilities, represented by expansion in spherical harmonics, to second order, it is shown that the exponential growth into bubble disruption in a certain parameter regime is checked and a saturated stable state of shape distortion is possible. Experimental evidence provided by Mie scattering is presented and a possible connection to simultaneous spatially anisotropic light emission discussed. Implications for the mechanism behind bubble death is discussed in connection with the experimental results.

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