Collective dissolution of microbubbles

Supplementary Material

Sébastien Michelin,1,2,∗ Etienne Guérin,3 and Eric Lauga2,†

1LadHyX – Département de Mécanique, Ecole Polytechnique – CNRS, 91128 Palaiseau, France.
2Department of Applied Mathematics and Theoretical Physics, University of Cambridge, Cambridge CB3 0WA, United Kingdom.
3Department of Mechanical and Aerospace Engineering, University of California, San Diego, 9500 Gilman Drive, La Jolla, California 92093-0411, United States

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The Supplementary Material includes four different videos of the dissolution process for 2D and 3D lattices.

− movie_Nl4_hexcirc.mp4: Dissolution process of 2D circular and hexagonal lattices with \( N = 61 \) bubbles. The bubbles are initially distributed on \( N_l = 4 \) layers, have unit radius \( a = 1 \) and are separated by a distance \( d = 4 \). The colour of a bubble’s surface corresponds to its size.

− movie_Nl10_hex.mp4: Dissolution process of a 2D hexagonal lattice with \( N = 331 \) bubbles. The bubbles are initially distributed on \( N_l = 10 \) layers, have unit radius \( a = 1 \) and are separated by a distance \( d = 4 \). The colour of a bubble’s surface corresponds to its size.

− movie_circular_sensitivity.mp4: Dissolution process of 2D circular lattices with \( N = 331 \) bubbles distributed over \( N_l = 10 \) layers. The bubbles are separated by \( d = 4 \). The bubbles’ positions are the same for the three lattices, which differ by the initial size distribution: (left) uniform unit radius, (center) random fluctuations and (right) non-random fluctuations in the shape of a smiley face with \( (\delta a)_{\text{rms}} = 6 \times 10^{-3} \). The colour of a bubble’s surface corresponds to its size.

− movie_3D_sphere.mp4: Dissolution process for a 3D spherical lattice with \( N = 361 \) bubbles. The bubbles are initially distributed on \( N_l = 4 \) spherical layers, have unit radius \( a = 1 \) and are separated by a distance \( d = 8 \). The colour of a bubble’s surface corresponds to its size. The camera view is artificially rotated around the fixed lattice to provide better visualization.

∗Electronic address: sebastien.michelin@ladhyx.polytechnique.fr
†Electronic address: e.lauga@damtp.cam.ac.uk