



Working Up a Lather

Bubbles, of little matter both in weight and presumed practical use, are the building blocks of foam. So that actually makes them crucial in many applications ranging from the padding inside bicycle helmets to fire retardants. And as anyone who has observed foam knows, bubbles come in various sizes, they grow, form clusters (as below), and burst—all of which has made describing foam quite difficult. Mathematicians recently successfully modeled clusters of hundreds of bubbles for the first time by treating different aspects of their interactions separately, such as the flow of fluid between connected bubbles. The key to their model was solving sets of linked partial differential equations, which allowed researchers to break up the problem into different components while making sure that the components could still be coupled together consistently.

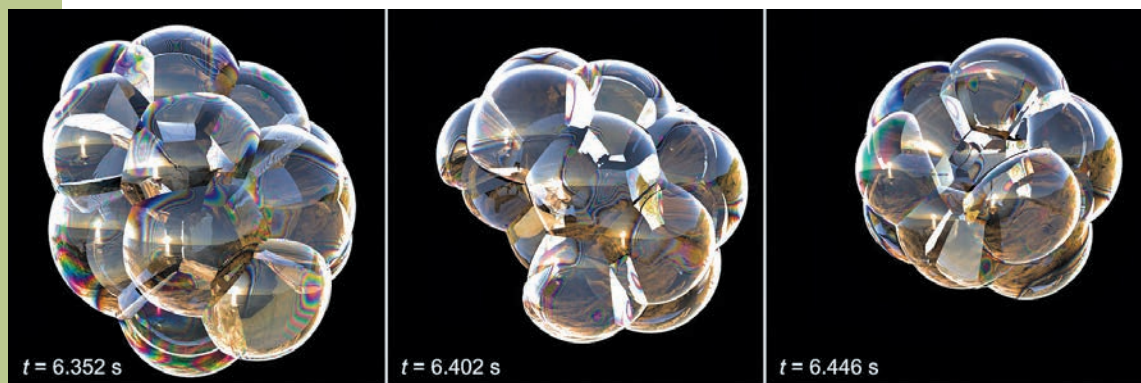


Image: James Sethian and Robert Saye, UC Berkeley.



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