



Instability of Liquid Surfaces and the Formation of Drops, Vol. 2: A Refined Theory (Classic Reprint) (Paperback)

By Ignace I Kolodner

Forgotten Books, 2015. Paperback. Condition: New. Language: English . Brand New Book ***** Print on Demand *****.Excerpt from Instability of Liquid Surfaces and the Formation of Drops, Vol. 2: A Refined Theory In an earlier paper [2] we showed how the notion of Taylor instability can be used to explain the break-up of accelerated thin liquid sheets into drops, and how on the basis of this theory the drop sizes can be estimated. The idea underlying the calculation is as follows: One considers a plane layer accelerated in a direction normal to its surface by imposing, e.g., a pressure difference on opposite surfaces. The zero order motion - which incidentally is an exact solution for the plane layer - is a parallel flow with the velocity of bounding surfaces. It is next argued that the flow actually deviates from the zero order solution because either the bounding surfaces are not perfectly plane, or the pressure on the boundary is not exactly constant, or because of some random perturbation that may occur at the outset or during the motion. To see what happens to the bounding surfaces, one considers the first order perturbation which satisfies linear equations and is represented by...



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