

# Deformations of soap bubbles in a uniform electric field

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The study of the deformations undergone by a soap bubble submitted to an electrical force began with Taylor and Wilson<sup>1</sup> and the observation of the so-called Taylor's cones. Beyond this particular structure, few studies analyzed the bubble deformations. For example, what is the link between the deformations and the electrical force? Or, how do charges move in the thin soap film formed by the bubble? To answer those questions, we characterize the shape variations of the surface of the bubble immersed in the uniform electric field of a plan capacitor. In particular, our study focuses on hemispherical bubbles lying on the bottom electrode of a plane capacitor. This study allows us to observe some interesting phenomena like the appearance of a hysteresis cycle in the deformation amplitude.

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1. C.T.R Wilson & G.I. Taylor, *Math Proc Cambridge* **22**, 728 (1925)