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**Electrohydrodynamic Equatorial Streaming** BRAYDEN WAGONER, CHRISTOPHER ANTHONY, Purdue University, PETIA VLAHOVSKA, Northwestern University, MICHAEL HARRIS, OSMAN BASARAN, Purdue University, SCHOOL OF CHEMICAL ENGINEERING, PURDUE UNIVERSITY TEAM, ENGINEERING SCIENCES AND APPLIED MATHEMATICS, NORTHWESTERN UNIVERSITY TEAM — When subjected to electric fields, spherical liquid drops can deform, and disintegrate by fissioning, cone-jetting, and in a variety of other ways. The strength of the electric field as well as the electrical and other physical properties of the drop and surrounding medium determine both the extent and type of deformation (prolate/oblate) that the drops can undergo prior to disintegration. At large electric field strengths, prolate drops emit thin jets from conical structures (Taylor cones) that form at their poles. Oblate drops, on the other hand, may burst at their centers (dimpling) or emit a thin sheet from their equators (equatorial-streaming) [Brosseau and Vlahovska, Phys. Rev. Lett., vol. 119, 2017]. We probe the physics behind these two oblate instabilities through direct numerical simulation.

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