

Abstract Submitted  
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**WITHDRAWN: Splitting of drops impacting a fiber** ELISE LORENCEAU, MICHELE ADLER, CNRS-LPMDI — We are interested in the way a filter (a grid for example) can stop the liquid drops of an aerosol passing through it. To study this complex problem, we focus on the impact of a drop onto a horizontal fiber. If the drop impacts the fiber with a velocity smaller than a critical velocity, it is entirely captured by the solid substrate. Both viscosity and capillarity are able to slow down the drop and the critical velocity for capture was recently determined when capillary is dominant.<sup>1</sup> We focus on the determination of this critical velocity in the viscous regime and emphasize in particular the role of the drop shape. Then, we consider the situation when drops impact the fiber with a velocity higher than the critical velocity. In that case, the liquid phase is fragmented; part of the liquid phase remains stuck on the fiber while another part is expelled from the solid substrate. We show that depending on the properties of the liquid, different fragmentation patterns can be observed; the droplet can either be split up or explode into a myriad of dispersed droplets.

<sup>1</sup>E. Lorenceau., C. Clanet., D. Quéré Capturing drops with a thin fiber, JCIS 279, 192 (2004)

Elise Lorenceau  
CNRS-LPMDI

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