How drops behave on slippery surfaces

David Quéré

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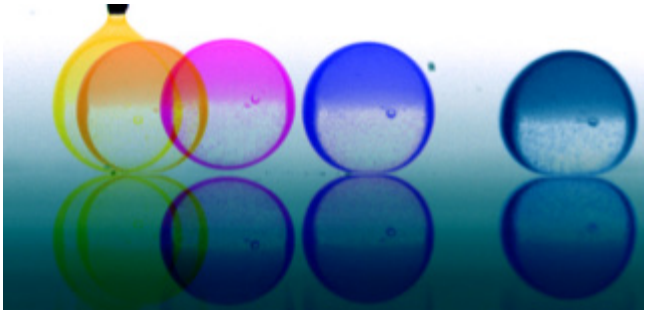
*Online **link here** via MS Teams*



This talk discusses how solids can be made slippery for liquids, and more specifically for water drops. This situation of obvious practical interest (for instance, think about the numerous cases where we would materials to remain dry in rain) also raises beautiful basic questions: Specifically, how to keep drops from sticking to surfaces? How to minimize the friction of these drops when they are mobile? We'll try to answer these questions by considering three approaches: Highly-hydrophobic solids, hot substrates, and lubricated materials.

David Quéré Professor ESPCI-Paris and École Polytechnique, holds the Ph.D. in Physics from Université Pierre et Marie Curie, Paris. Prior to his Ph.D. he served one year in the French Navy (where he observed the radioactive cloud of Chernobyl). Until 2006 he was a research scientist at the Physics Labs at Collège de France. In 2006 he joined the Laboratoire de Physique et Mécanique des Milieux Hétérogènes, ESPCI-Paris and was also appointed Professor at École Polytechnique, Departments of Physics and Mechanics.

He is engaged in experimental research in Soft Matter Physics and Fluid Mechanics, with a strong interest in interfacial hydrodynamics (drops, films, bubbles, coating, wicking) as well as in aerodynamics, morphogenesis and biomimetics, all topics on which he coworked with about 35 PhD students (the best experience in his academic career).

He has served as scientific advisor at Saint-Gobain (Paris), Procter & Gamble (Cincinnati) and Nikon/Essilor (Tokyo), a coeditor at Europhysics Letters and an associate editor at Physical Review Fluids. He received the 2001 Ernest-Dechelle Prize of the Académie des Sciences (Paris), the 2014 Silver Medal of CNRS (France), and the 2021 Fluid Dynamics Prize from the APS. He is coauthor of the text **Capillarity and Wetting Phenomena** and the multimedia text **Multimedia Fluid Mechanics**.

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