

Abstract Submitted
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Blowing away sticky particles AMANDINE LECHANTRE, PIERRE-BRICE BINTEIN, ESPCI Paris, BERENGERE ABOU, Universit de Paris-Diderot, JOS BICO, ESPCI Paris — The context of our study is STELLAR, a European project. The project aims at reducing drag and fuel consumption during flight with novel wings whose aerodynamic properties are sensitive to contamination by insect debris. Can the airflow blow away these debris? To understand the physical mechanisms involved in this phenomenon, we designed a model experiment where a spherical bead is deposited inside a wind tunnel on an horizontal surface coated with a thin layer of a viscous liquid. What is the velocity of the bead as a function of its size and density, of the thickness and viscosity of the film and the velocity of the airflow? Is it possible to lift away the bead?

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