Simulations of fluttering leaves

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Keywords: *Biological Fluid Dynamics, Fluid-Structure Interaction, Plants, Immersed Boundary Method*

Leaves may flutter in light winds for the purpose of convective and evaporative heat transfer. We will simulate the passive fluid-structure interaction of leaves fluttering using the immersed boundary method. We will discuss the models developed to appropriately study the heat dissipation and how we have incorporated these thermal dynamics coupled with the fluid flow into the computational simulations. We will present results of the simulations where we have studied the impact of varying Reynolds and Péclet numbers.