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**Low Reynolds number flow near tiny leaves, stems, and trichomes**[1] CHRISTOPHER STRICKLAND, University of North Carolina, Chapel Hill, VIRGINIA PASOUR, Army Research Office, LAURA MILLER, University of North Carolina, Chapel Hill — In terrestrial and aquatic environments such as forest canopies, grass fields, and seagrass beds, the density and shape of trunks, branches, stems, leaves and trichomes (the hairs or fine outgrowths on plants) can drastically alter both the average wind speed and profile through these environments and near each plant. While many studies of flow in these environments have focused on bulk properties of the flow at scales on the order of meters, the low Reynolds number flow close to vegetative structures is especially complex and relevant to nutrient exchange. Using three-dimensional immersed boundary simulations, we resolve the flow around trichomes and small leaves and quantify velocities, shear stresses, and mixing while varying the height and density of idealized structures.

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