Towards Urban Air Mobility

Small electric drones are very popular nowadays, but what if we could use them for human transportation? Full electric propulsion would get rid of emissions and fuel burn in vehicle engines. Multirotor drone configurations will soon provide the capability to take off and land vertically while carrying people, with no need for long runways—think of no traffic in your daily commute!

However, from small drones to medium-sized urban air mobility vehicles—popularly called flying cars—understanding the complex flow structures generated by the rotors and their interactions with each other and the fuselage are crucial for designing quieter, safer, and more efficient vehicles. High-fidelity CFD simulations run on NASA’s Pleiades supercomputer are essential to understanding these complex physics problems.