

Portable multirotor microgravity platforms

Compact like drop tower – Versatile like parabolic flights

The core idea

Subjecting a multirotor to a controlled free-fall causes the payload to experience microgravity

Motivation

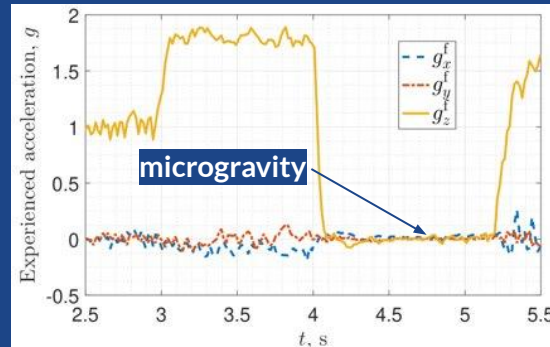
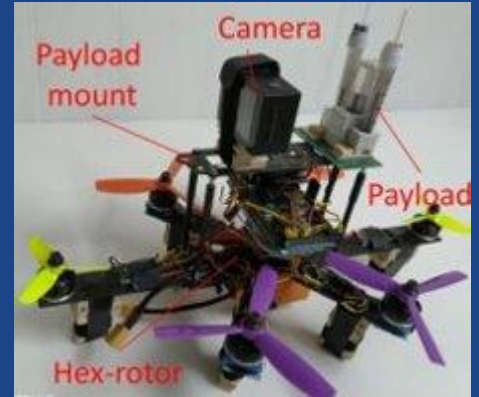
Low-cost alternative to microgravity platforms like drop tower, space stations, ...

Contributions

- Microgravity maneuver design
- Disturbance (drag) observer design
- Robust controller design
- Microgravity capability demonstration in simulations and in flight

Challenges

- Estimating drag accurately and compensating to ensure a free-fall
- Maintain attitude control during free-fall



Publications



Link to Google Scholar page

Contact: siddhardhak2010@gmail.com