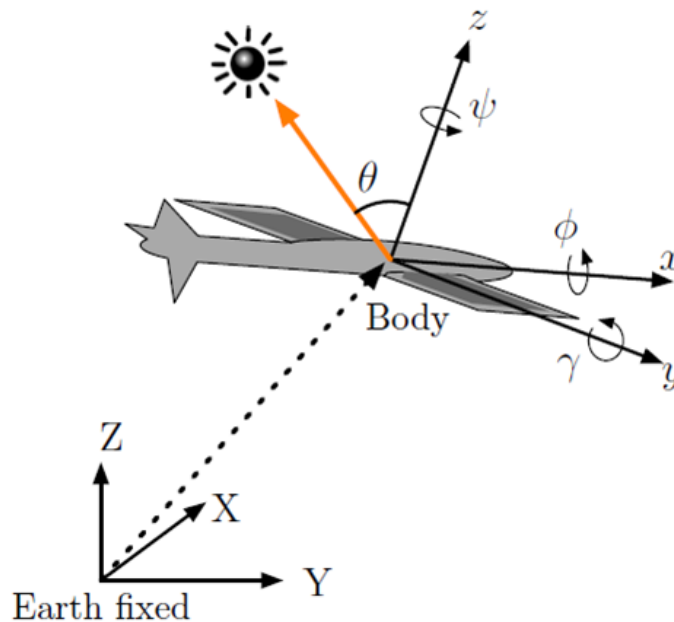


Optimal Path Planning and Power Allocation for Solar-Powered UAVs



In this project the problem of optimal path planning and power allocation for Unmanned Aerial Vehicles (UAVs) is explored. The UAVs are equipped with photovoltaic cells on top of their wings and their energy sources are solar power and rechargeable batteries. The Sun incidence angle on the photovoltaic cells, which subsequently affects energy harvesting, is determined by the attitude of the UAV and the Sun position.



[Slides for ACC 2013](#)

Publications

- Saghar Hosseini and M. Mesbahi, "[Energy Aware Aerial Surveillance for a Long Endurance Solar-Powered UAV](#)", In Proc. of the AIAA Guidance, Navigation and Control Conference., 2013.
- Saghar Hosseini, Ran Dai, and M. Mesbahi, "[Optimal Path Planning and Power Allocation for a Long Endurance Solar-Powered UAV](#)", In Proc. of the IEEE American Control Conference, 2013.
- Ran Dai, Unsik Lee, Saghar Hosseini, and M. Mesbahi, "[Optimal Path Planning for Solar-Powered UAVs Based on Unit Quaternions](#)", 3104-3109. In Proc. of the 51st IEEE Conference on Decision and Control, 2012.