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**Ariadna Farres\***, 8800 Greenbelt Rd, Greenbelt, MD 20771, and **Josep Masdemont, Gerard Gomez, Chen Gao, David Folta** and **Cassandra Webster**. *Understanding the geometry and dynamics of station-keeping around Libration Point Orbits.*

Over the years Libration Point orbits have become relevant in space applications, as the regions around the L1 and L2 points in the Circular Restricted Three-Body (CRTBP) are ideal for space weather missions like the Space Weather Follow-On (SWFO) or deep space observations like the James Webb Space Telescope (JWST). It is well known that Libration point orbits are unstable and require routine station-keeping maneuvers to remain in orbit. Over the years different strategies have been proposed, each of them with different objective functions. In this talk, we want to describe the geometry behind some of these strategies making use of the Floquet modes. We focus on two different strategies, the widely used by NASA approach, x-axis velocity constraint at the plain crossing, and the Floquet mode approach. The first approach looks for the delta-v required to ensure that at the 4th plane crossing  $V_x = 0$ , ensuring the spacecraft to orbit around the Libration point. On the other hand, the Floquet mode approach looks for the delta-v that cancels the unstable mode in the Floquet reference frame, bringing the trajectory close to the stable manifold or a reference orbit. As we will see, both approaches have some basic geometrical common features. (Received January 12, 2021)