

## **Guidance and Navigation for Electromagnetic Formation Flight Orbit Modification**

Electromagnetic formation flight (EMFF) is a recent concept, aiming to control relative motions of satellites flying in formation using magnetic interactions. Each satellite is equipped with a magnetic dipole. The formation degree of cooperation, depending on the ability of each spacecraft to control its dipole and its attitude, has a great impact on the methods used to realise the formation GNC. This paper describes results obtained in the case of semi-cooperative EMFF composed of a chaser and a target, in the field of navigation and guidance. Preliminary studies indicate that the target relative position and attitude can be determined while measuring the magnetic field at the chaser location, and the acceleration of this chaser. Focus is also made on the guidance for the whole formation orbit transfer, if only the chaser has thrust capacity: theory shows that geometrical configurations exist for which the formation is in an equilibrium state.