

Course on Electrodynamic Tethers

Prof. G. Sánchez-Arriaga

Universidad Carlos III de Madrid

Space ElectroDynamic Tethers (EDTs) are long conductors in orbit that carry an electric current and exchange momentum and energy with a planet magnetosphere. This propellant-less technology has a wide range of applications that include the passive deorbiting of space debris, thrust generation, power harvesting, and radiation belt remediation, among others. EDTs have also been proposed for scientific missions on wavefront excitation in plasmas and artificial aurora generation, and they can be used to investigate interesting phenomena like the current collection and emission by objects immersed in plasmas and the behaviour of low work-function materials in the tough space environment. This course, aimed to Ms and PhD students, have four sessions on the following topics

1. EDTs Fundamentals (2/12/2025).
2. EDT modelling and the BETsMA v2.0 software (3/12/2025).
3. Electrodynamic tether applications (9/12/2025)
4. The E.T.PACK project (www.etpack.eu) (10/12/2025)

The four sessions are scheduled **from 13:00 to 15:00 in room 4.1.E02**