Thesis Proposal for the Master's Degree in Physics

Title: Space weather and turbulence in interplanetary space plasmas

Abstract (max 10 lines):
Space Weather is increasing its importance in order to protect critical infrastructure both in space and on Earth. Disturbances from the Sun can, in fact, generate geomagnetic storms, causing geomagnetically induced currents at ground that can disrupt the operation of power grids and also heat the ionosphere thus perturbing propagating signals as HF radio communication, GPS system etc. These effects can seriously affect our technological society, the relevance of this scientific topic is testified by the interests of many worldwide Space Agency and, for example, the Military Air Force Meteorological Service.
The thesis aims at investigating the role of interplanetary plasma turbulence for the determination of space conditions which can play a role in the determination of Space Weather disruptive events.

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Laboratory where the thesis is carried out: Astrophysics

Any participating external structures: Italian Space Agency (ASI)

Type of thesis:
☐ compilation
☒ research:
specify if ☐ experimental ☒ theoretical and ☒ data analysis