

Interstellar Interceptors

Mission design for rendezvous with objects in hyperbolic orbits

Jorge Martínez

Supervised by:

Josep M. Trigo-Rodríguez (ICE-CSIC/IEEC)
Eloy Peña-Asensio (Politecnico di Milano)

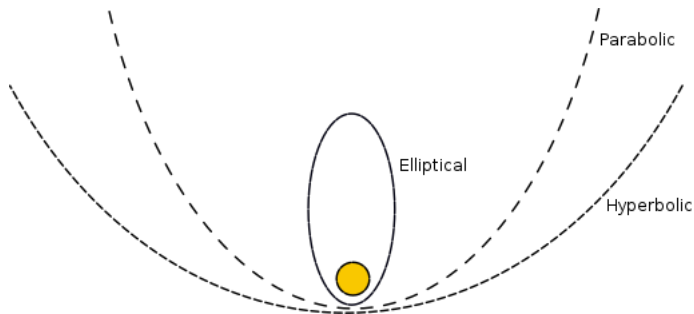
Universidad Internacional de Valencia

May 22, 2024

What are interstellar objects?

Definition

Interstellar objects (ISOs) are asteroids, comets or planetary bodies moving through interstellar medium (ISM) without being gravitationally bound to a star.



ISOs follow hyperbolic orbits

Why are interstellar objects important?

They present a unique opportunity to study extraterrestrial bodies that have traversed vast cosmic distances.

Why are interstellar objects important?

They present a unique opportunity to study extraterrestrial bodies that have traversed vast cosmic distances.

Their study can unleash information about:

- Better understanding the formation of planetary systems
- Exploring the origins of life by analyzing their chemical composition
- Technological motivation

Why are interstellar objects important?

They present a unique opportunity to study extraterrestrial bodies that have traversed vast cosmic distances.

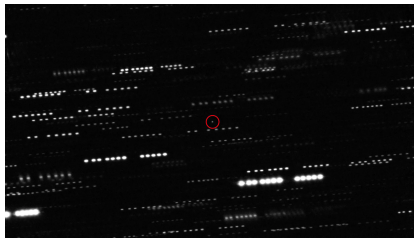
Their study can unleash information about:

- Better understanding the formation of planetary systems
- Exploring the origins of life by analyzing their chemical composition
- Technological motivation

Motivation of this work

Devise orbits for rendezvous with ISOs to study their physical properties.

Why are they interesting?



1I/'Oumuamua



2I/Borisov

Table of Contents

1 Second section

Sample frame title

In this slide, some important text will be highlighted because it's important. Please, don't abuse it.

Remark

Sample text

Important theorem

Sample text in red box

Examples

Sample text in green box. The title of the block is "Examples".

Two-column slide

This is a text in first column.

$$E = mc^2$$

- First item
- Second item

This text will be in the second column and on a second thought this is a nice looking layout in some cases.