NAVOTAS NATIONAL SCIENCE HS

EARS: Every-terrain Aperture Radars' Wind Scatterometry

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OBJECTIVES

To construct a multi-spectral microwave sounders that is able to estimate winds (at least up to 30 m/s), both over ocean and land.

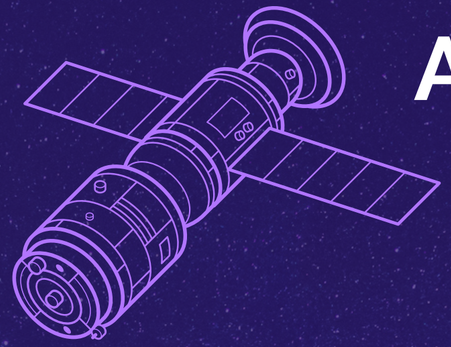
Build a software that can connect and digest data from existing soil moisture and vegetation sounders, and give us the wind data in gale scale for land.

IMPORTANCE

- It can help us determine the maximum sustained windspeeds and indirectly estimate the pressure estimate of weakening tropical storms that are making landfall.
- It can also demonstrate our country's technological capability on Internet of Things (IoT), by working with other satellites, which would also be useful not just in meteorology, but potentially on our future on space logistics, traffic control, infra planning, and scientific research.
- It can compensate the lack of our comprehensive Doppler radar network on our country in terms of providing us how expansive the gale fields are which is useful on determining the tropical cyclone wind signals of places concerned more precisely.

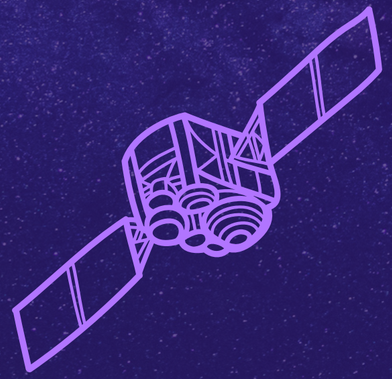
KEY FEATURES

PAYLOADS



Aperture Radars

Three aperture radars, each with the following wavelengths: 5.7cm, 8.2mm, 10.4um

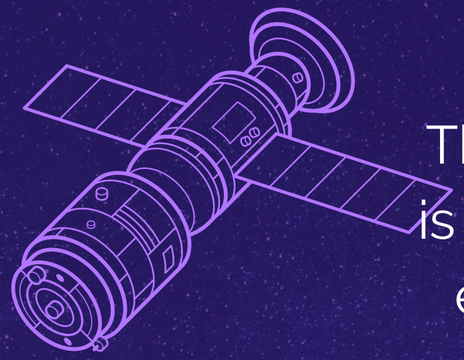


Communication Satellite

Two satellites facing Earth, both in west and east direction.

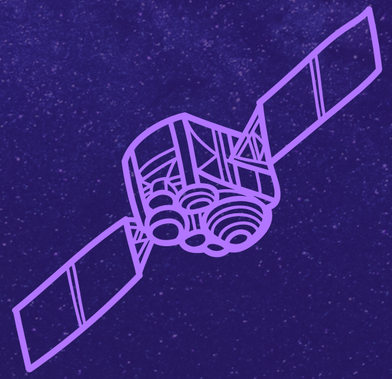
KEY FEATURES

ORBIT



Height

The preferred orbital hight for this kind of satellite is at 750 to 850 km above sea level, where we can expect this to pass over a tropical basin at least twice a day.



Trajectory

The orbital trajectory would be geosynchronous, polar-orbiting.