



UNIVERSITÀ  
DI TRENTO

Dipartimento di  
Fisica



# PhD Program in Space Science and Technology - SST

## Introduction to Spaceborne Radars for SSA

### Specific Seminar – Curriculum 5

2023, September 15, 12:00 p.m.

#### Speaker:

Dr. Marco Maffei, Thales Alenia Space – Italia (TAS-I)

#### Abstract:

The space environment around planet Earth comprises a variety of nonhomogeneous and nonstationary fluxes of natural and man-made junk, which may collide with strategic orbital infrastructure, jeopardize the space economy, and pose a severe threat to the Homeland Protection (HP). To this end, large ground-based radars and optical telescopes allow monitoring debris populations by forming fence coverage areas along with a grueling data fusion for orbit estimation while coping with limits related to temporal and spatial observation constraints, atmospheric hindrances, and detection performance (especially with respect to small-size targets). Recently, research efforts have also been devoted to contriving an active space-based debris detection and tracking capability in the microwave region to complement current surveillance assets for an improved Space Situational Awareness (SSA). Accordingly, this short lecture presents a brief introduction to novel Spaceborne Radar (SBR) archetypes for SSA.

#### Online attendance:

Teams Link:

[https://teams.microsoft.com/l/meetup-join/19%3ameeting\\_ZmNjMmQ0NTYtNzU0Ni00YmViLWI4MzgtZjhmMzcxNTMyMDE5%40thread.v2/0?context=%7b%22Tid%22%3a%222e10e44d-c7b9-43e3-b020-1292482e504a%22%2c%22Oid%22%3a%22d0940c83-ef2a-40fe-9394-abeb94dcaa94%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_ZmNjMmQ0NTYtNzU0Ni00YmViLWI4MzgtZjhmMzcxNTMyMDE5%40thread.v2/0?context=%7b%22Tid%22%3a%222e10e44d-c7b9-43e3-b020-1292482e504a%22%2c%22Oid%22%3a%22d0940c83-ef2a-40fe-9394-abeb94dcaa94%22%7d)

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