



Istituto di Elettronica
e di Ingegneria
dell'Informazione e
delle Telecomunicazioni

Thursday seminars

*Taking a Look at the Future:
a cocktail hour event!*



UMBC



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Photonic Integrated Circuits (PIC) in Space: Advancing Earth's Atmospheric Sounding Capability

For many years space and meteorological agencies around the world have strongly advocated the development of hyperspectral (a few hundred to a few thousand channels) microwave sensors, to improve Earth atmosphere sounding capabilities from space, for temperature and water vapor profiles in the Planetary Boundary Layer.

Current microwave technology has provided tremendous progress in numerical weather prediction, climate modeling and societal applications with high impact for human health and the economy. However, it suffers from limited spectral resolution and coverage due to size, weight, power consumption, and cost constraints.

In this scenario, Photonic Integrated Circuits offer a reliable solution to solve the stalled progress of the current technology.

In this talk, I will introduce the work that our team is performing at NASA Goddard Space Flight Center to develop: HyMPI. HyMPI combines Photonic Integrated Circuits and Application Specific Integrated Circuits to break through a new era of advanced measurements of Earth's atmospheric temperature and water vapor profiles with a dramatic reduction of the footprint, mass, power consumption and costs of the systems.

[Registration form](#)

Teams Webinar • 15 December 2022 – 17:30

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