

SEMINARIO DEL GIOVEDÌ  
CETEMPS

# “Neural Networks for Atmospheric Remote Sensing”

**Dott. Fabio Del Frate**

*Professore Associato presso l'Università di Roma "Tor Vergata"*

**Giovedì 28 Giugno 2018, ore 11:30**

**Aula "Signorelli", Edificio Renato Ricamo, Coppito I**

## **ABSTRACT**

Artificial intelligence based on neural networks, with the inherent capability of identifying nonlinear relationships among data, has been providing in last decades new generation algorithms in the field of remote sensing atmospheric inversion problems. Moreover, the effectiveness of these techniques, compared to more standard approaches, may still increase because of the data enhancement provided by the latest technological advances both in terms of storage possibilities and information collection. The seminar will first introduce the main techniques based on neural networks and then will show some applications regarding the estimation of typical atmospheric variables and of gas concentrations.

## **Biografia.**

Fabio Del Frate received the Laurea degree in Electronic Engineering in 1992 and the Ph.D. degree in Computer Science in 1997, both from the University of Rome “Tor Vergata”, Italy. From September 1995 to June 1996 he was Visiting Scientist with the Research Laboratory of Electronics of Massachusetts Institute of Technology, Cambridge, USA. In 1998 and 1999 he was with the ESRIN centre, European Space Agency, Frascati. Currently he is an Associate Professor at University of “Tor Vergata”, where he teaches courses on Remote Sensing and Applied Electromagnetism in various Master and PhD Programs. He is or has been principal investigator/project manager in several ESA and ASI (Italian Space Agency) funded research projects, author of numerous scientific publications with a special focus on feature extraction algorithms from EO data using neural networks, Associate Editor for “Geoscience and Remote Sensing Letters”, Guest Editor for the “Eurasip Journal on Advances in Signal Processing” and “Remote Sensing”, Senior Member of the IEEE Geoscience and Remote Sensing Society, EUMETSAT Associate Scientist.