



## Seminar

Y.T. SOLANO CORREA

solano@fbk.eu

Fondazione Bruno Kessler

Povo (TN)

A Method for the Analysis of Small Crop Fields in Sentinel-2 Dense Time Series

Satellite Image Time Series (STIS), like the Sentinel-2 (S2) ones, provide a large amount of information, due to the better compromise between temporal, spatial and spectral resolutions. The high revisit frequency and spatial resolution of S2 result in: i) increase of the probability to acquire cloud free images and ii) availability of detailed information for analyzing small objects. These characteristics become of interest in precision agriculture, where crop behaviors understanding benefits of dense SITS. In the past, information about agricultural practices have been collected over large regions and considering mixed/aggregated crops due to the poor trade-off between spatial and temporal resolutions. Products have been generated at low spatial resolution and daily basis; or at high spatial resolution and weekly/monthly basis. They are meaningful for large agricultural fields, whereas they are limiting when fields show small average size. In this context, S2 characteristics allow for both high spatial and temporal resolutions products. However, no automatic method exists able to: i) effectively separate small fields from each other in an unsupervised way; and ii) deal with irregularly sampled data in time. Thus, this seminar presents a method suitable for the analysis of small crop fields in S2 dense SITS that accounts for S2 characteristics. The method: (i) pre-processes the S2-SITS, (ii) fuses spatio-temporal information, (iii) analyzes the spatio-temporal evolution of the data; and (iv) extracts relevant spatio-temporal information. The effectiveness of the proposed method was corroborated by experiments carried out on S2-SITS acquired over an area located in Barrax, Spain.

Room 6302 – Palazzo della ricerca e della conoscenza

February, 19<sup>th</sup>, 2019 – 09:00-10:00



FONDAZIONE  
EDMUND  
MACH

