LIDAR and Hyperspectral remote sensing for water resources protection in western Veneto region

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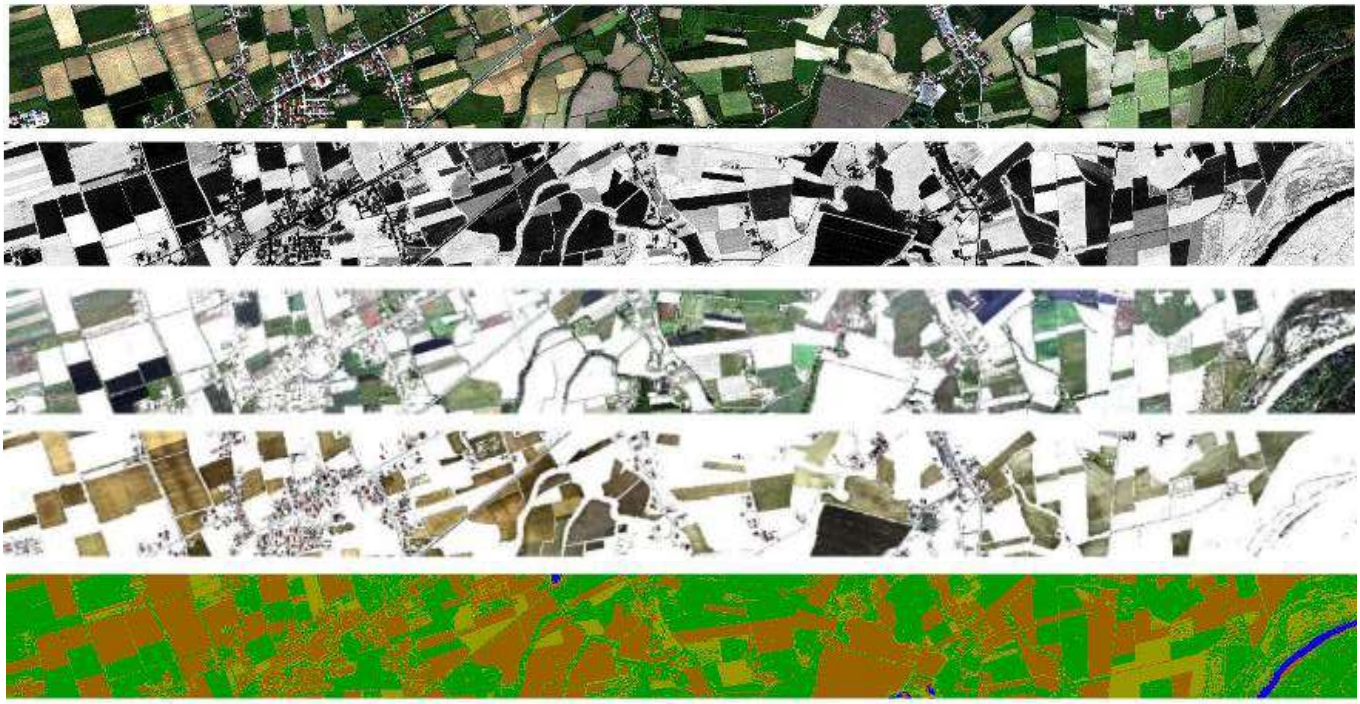
ETRA S.p.A. has recently acquired a wide sector of western Veneto region with LIDAR and Hyperspectral systems with the ultimate objective to evaluate the anthropogenic pressure within the territory and its water resources. It is known, in fact, how agricultural and industrial activities, roads and railway infrastructures as well as urbanization have important impacts on the regional surface and subsurface water assets. The project aims to use the data from the 2021 ETRA S.p.A. flight campaign to classify the various surface units in the detail allowed by current advanced imaging technologies. Hyperspectral data can be indeed analyzed to derive predictive information on texture as well as gravel and clays content within soils in the high and middle Veneto plain between Padua and Bassano del Grappa with particular regard to areas of water resurgence and caption. On the other hand LIDAR data can be used to better characterize the Asiago Plateau geo-structural framework that greatly affect the underground karst water circulation. This is particularly relevant considering the rapid dispersion of the Plateau's winter resources and the recent droughts that make imperative the optimization of the recovery of surface and sub-surface water.



A good background in multi- and hyperspectral data handling and analysis, use of LIDAR data and DTM in GIS environment would be required. Proficiencies in photointerpretation and/or structural analysis are also highly desirable.
Ability to work in teams is particularly well-received considering the foreseen collaboration with the ETRA S.P.A company.

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