

EGU21-11355

<https://doi.org/10.5194/egusphere-egu21-11355>

EGU General Assembly 2021

© Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.



## Fuel type mapping in a typical Mediterranean ecosystem using object-based image analysis of Sentinel 2 imagery and auxiliary GIS data

Konstantinos Karystinakis, **Vasileios Alexandridis**, Stefanos Stefanidis, and Georgia Kalantzi

OMIKRON SA, 15th km. of Thessaloniki-Moudania Nat. Rd, 57001, Thermi, Thessaloniki, GREECE (kostask@omikron-sa.gr)

Wildfires have been an integral part of the Mediterranean ecosystem. Moreover, the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report emphasizes that the Mediterranean basin is expected to be drier by the end of the 21st century, while future warming will possibly be higher than the global mean. Therefore, outbreaks of wildfires are expected to increase. One of the most important factors for wildfire behavior apart from the meteorological conditions, is fuel types. In this study, a detailed fuel type mapping in a case study area was addressed. To accomplish this goal, an object-based image analysis (OBIA) approach was implemented using the open-source Orfeo toolbox. The freely available Sentinel-2A satellite images were processed in combination with auxiliary European and National scale GIS data. The classification results demonstrate a high-quality Land Cover map with 84% of overall accuracy. The classified land cover polygons were associated with high-resolution tree cover density data derived from Copernicus Land Monitoring Service. This coupling led to the synthesis of the fuel type map. To this end, this approach can fulfill the efficient mapping of fuel types for operational purposes. This research has been co-financed by the European Regional Development Fund of the European Union and Greek national funds through the Operational Program Competitiveness, Entrepreneurship and Innovation, under the call RESEARCH -CREATE -INNOVATE (project code:T2EDK-01967)