



Forest fires simulation in the Alpine region. New data and innovative approaches needed

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Among the predominant natural disturbances affecting Mediterranean regions, nowadays forest fires frequently occur in Central and Northern Europe, potentially leading to several issues in ecological, geomorphological, economic and social terms. In this regard, local authorities are becoming gradually confident with their management even where forest fires were historically scarce. In this context, semi-empirical models are particularly useful in estimating fire behaviour, in order to predict key factors related with wildfires risk (e.g., flames length, fire type, rate of spread). At the same time, accurate estimation of models inputs actually represents the principal limitation to outputs reliability, mainly due to the difficulty in retrieving specific data like canopy fuel characteristics or fire behaviour fuel models. In light with the above, there is a growing need to find new methods able to infer such simulation variables, for example starting from remote sensing data acquisition and elaboration, as well as by adapting already existing equations and workflows to European specific contexts. The project RETURN aims therefore to enhance the spatial mapping of fire simulators inputs layers within the Alpine region by coupling an extensive field data collection with high-resolution Light Detection and Ranging (LiDAR) and Unmanned Aerial Vehicle (UAV)-based data collection. The results of the Project could be useful in increasing the amount of information available for local administrations of the Alpine region, aiming to ease the application of fire behavior simulators to manage such a natural disturbance increasingly frequent in this mountain area.

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Supplementary materials

Supplementary material file