









## Abstract

# Integrated Platform for Wildfire Prevention and Management: The S2IGI Project <sup>†</sup>

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<sup>†</sup> Presented at the Third International Conference on Fire Behavior and Risk, Sardinia, Italy, 3–6 May 2022.

**Abstract:** The purpose of the S2IGI (Sistema Satellitare Integrato Gestione Incendi) project is to support the different phases of wildland fire prevention and management by a set of toolboxes, aiming to provide a short- and medium-term forecast of wildfire danger, an early detection of wildland fires, real-time forecasting of wildland fire propagation, and an assessment of fire damages; all the services are based on the integration of: Earth observation (EO) advanced technologies of remote sensing; high-resolution weather numerical models; and a decision support system platform. The project can support the wildland fire management activities along the following three phases: (1) forecast and prevention, (2) monitoring, detection and suppression, and (3) damage assessment and vegetation recovery. One of the main products of the project is an integrated system for the early detection of ignitions, based on an improved version of the SFIDE algorithm, derived from the analysis of the MSG SEVIRI sensor data. The hot-spots provided by the SFIDE algorithm are automatically processed by a wildfire simulator in order to predict a probabilistic wildfire spread map, together with some themes related to the wildfire intensity. The modeling chain can be used for real-time or off-line applications. Again, the project provided a spatially consistent estimation of the wildfire risk and a map of burned areas updated on a weekly basis. The set of products is also completed by the generation of maps of areas suitable for prescribed fire interventions and, regarding the post-fire applications, by maps of the soil erosion risk.

**Keywords:** wildfire detection; wildfire hazard assessment; burned areas estimation; wildfire propagation; Mediterranean areas



**Citation:** Casula, M.; Arca, B.; Laneve, G.; Cadau, E.; Bua, R.; Pedes, F.; Salis, M.; Andronico, P.; Ventura, A.; Casula, F.; et al. Integrated Platform for Wildfire Prevention and Management: The S2IGI Project. *Environ. Sci. Proc.* **2022**, *17*, 88. <https://doi.org/10.3390/environsciproc2022017088>

Academic Editors: Pierpaolo Duce, Donatella Spano, Valentina Bacci, Grazia Pellizzaro and Costantino Sirca

Published: 18 August 2022

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**Author Contributions:** Conceptualization, B.A., G.L., and M.C. (Marcello Casula); methodology, B.A., M.C. (Marcello Casula), G.L., E.C. and F.C.; software, M.C. (Marcello Casula), R.B. and F.P.; validation, M.S., B.A., P.A. and A.V.; formal analysis, G.L., M.C. (Marcello Casula) and M.C. M.C. (Maurizio Cao); investigation, B.A. and F.C.; resources, B.A., G.L. and M.C. (Marcello Casula); data curation, B.A., G.L. and M.C. (Maurizio Cao); writing—original draft preparation, B.A.; writing—review and editing, B.A., G.L. and M.C. (Marcello Casula); visualization, B.A., G.L. and M.C. (Marcello Casula); supervision, B.A., G.L. and M.C. (Marcello Casula); project administration, B.A. G.L. and M.C. (Marcello Casula); funding acquisition, B.A. G.L. and M.C. (Marcello Casula). All authors have read and agreed to the published version of the manuscript.

**Funding:** This research was funded by the Regional Administration of Sardinia, S2IGI Project, grant number B87H18000290002, and the Italian Ministry of Education, University and Research (MIUR), FOE2019 Project, grant number 856/19.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** Not applicable.

**Conflicts of Interest:** The authors declare no conflict of interest.