



Advances in Forest Fire Behaviour Modelling Using Remote Sensing

Guest Editors:

Prof. Dr. Luis A. Ruiz

GeoEnvironmental Cartography
and Remote Sensing Group
(CGAT), Universitat Politècnica de
València, Camino de Vera s/n,
46022 Valencia, Spain

Dr. Andrew T. Hudak

U.S. Department of Agriculture,
Forest Service Rocky Mountain
Research Station, Moscow, ID
83843, USA

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Message from the Guest Editors

Accurate information about three-dimensional canopy structure and heterogeneous wildland fuel across the landscape is necessary for fire behaviour modelling system predictions. Recently, physically-based fire behaviour models have been developed to represent fuels and fire behaviour processes, showing promise for examination of fuel/fire/atmosphere interactions. Remote sensing tools and methods are starting to play an important role in the acquisition of a variety of data and in the estimation of such parameters at finer spatial scales, so they can be used as input in fire behavior models, where bulk density of canopy, understory and surface fuels must be estimated and quantified at voxel level, and fuel moisture content, from leaves, pine needles and fine roundwood at tree or patch level. This multiscale concept can only be achieved by using different types of acquisition devices and techniques capable to produce models at distinct levels of detail. The wide range of platforms (satellites, aerial, UAS and field-based) and sensors (multi and hyper-spectral, RADAR, LiDAR) nowadays available for data acquisition offer excellent prospects for addressing this multiscale problem.





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Editor-in-Chief

Dr. Prasad S. Thenkabail

Senior Scientist (ST), U. S.
Geological Survey (USGS), USGS
Western Geographic Science
Center (WGSC), 2255, N. Gemini
Dr., Flagstaff, AZ 86001, USA

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Remote Sensing Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

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