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Advances in Forest Fire Behaviour Modelling Using Remote Sensing

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Deadline for manuscript submissions:
closed (31 December 2021)

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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Message from the Editor-in-Chief

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