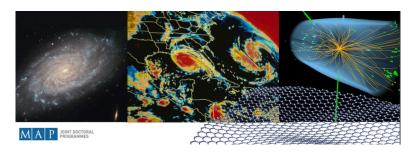Contribution ID: **130**   Type: **Contributed Talk (20 minutes)**

Future climate wildfire modelling using the atmophere-fire coupled model WRF-SFIRE, under different landscape management scenarios.

Friday 11 October 2024 16:45 (20 minutes)

Extreme fire events have been increasingly frequent under changing Climate. Improving landscape resilience is key in reducing the ecological and socio-economic impacts of wildfires. This work aims to provide groundwork to incorporate future climate compatible land management scenarios with fire spread modelling tools. In this scope, the coupled fire-atmosphere modelling system WRF-SFIRE was used in combination with bioclimatic analysis to produce alternative landcovers, examining fire hazard. The Fire Weather Index (FWI) was chosen as a fire predictor to determine two distinct extreme fire weather events, Hot and Dry, Cool and Windy. Alternative landcovers, incorporating management and replacement of present cover, were crosswalked into fire behaviour fuel models, and assimilated by WRF-SFIRE. Each landcover was tested against both fire-weather events, providing insights on simulated fire intensity and spread. Results showed that agricultural areas can hamper progression in higher moisture wildfires. Fuel treatment of forested areas provided the greatest reduction of wildfire spread rates and intensity when compared to other management strategies, namely in lower wind speed regimes.

Which topic best fits your talk?

Climate and Environment

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