

Interactive comment on “Evaluation of WRF-SFIRE performance with field observations from the FireFlux experiment” by A. K. Kochanski et al.

Anonymous Referee #1

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The manuscript provides an example on improving and evaluating WRF-SFIRE with the FireFlux field observations of a grass fire, and gives some suggestions for the design of future field campaigns that may benefit the fire modeling and evaluation of WRF-SFIRE and may make WRF-SFIRE suitable for operational real-time wildfire prediction in the future. The topic of the manuscript fits within the stated scope of GMD. The scientific significance of the present study is between fair and good. Specific comments are listed as follows

1. Sect. 4, in order to match the FireFlux observations of a grass fire, the authors adjusted the value of no-wind spread rate in default Rothermel's formulas from 0.02 to 0.1 (5 times!). Because Rothermel's formulas are commonly used in fire forecast on a region level, is it possible that the big adjustment is only make WRF-SFIRE perfect for

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the fire observed by FireFlux (simulated ROS is exactly the same with the observation as stated in Para.1 of Sec.5.1), and the simulations will become bad if one wants to use WRF-SFIRE to simulate other fires?

2. Sect. 4, the adjustment of fuel depth (discussed in the Para. 4 of Sec. 6.) should be mentioned in this section too.

3. Sect.5, “Fire spread rates are determined ...4.5m MT and 5m ST...”, why not use the time series of 10m for both ST and MT?

Minor comments,

1) Sect. 2, it will be better to add the various measured heights of temperature for both MT and ST in this section.

2) Sec 5.1, Para. 2 seems not be related to the fire spread. Why the authors put it here?

3) Sec. 5.2, for the last layer at the MT, Fig.5's caption said 42 m a.g.l., but P33, L6 said 43m a.g.l., which one is right?

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