We would like to thank the reviewer for their very helpful comments and critiques that allowed us to improve the manuscript. Below we supplied our responses to the specific comments.

Response to Reviewer#1

> *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 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?*

Thank you for this comment. Unlike in the original Rothermel's model, WRF-SFIRE allows for adjusting the no-wind spread rate without affecting the contributions from wind and slope. This adjustment is a part of the input data (description of the fuels in input files) and does not affect significantly the wind-driven rate of spread. WRF-SFIRE computes the fire rate of spread based on the wind component normal to the fire line. On the flanks, where the normal wind speed approaches zero, the rate of spread defaults to the no-wind rate of spread, which is appropriate more for the backfire than the flank fire. Since currently the model does not compute the flank rate of spread explicitly, we had to adjust it in order to have a realistic fire front shape. We did this correction based on previous idealized simulations to fix unrealistic narrowing of the fire front, not to tune the overall wind-driven rate of spread. Also, as this correction only adds a small constant, it has a very small effect on the overall rate of spread. In this study our correction is 0.08 m/s vs. the overall rate of spread of 1.61m/s (less than 5%).

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

Thank you for pointing this out. We added this missing information to the section 4.

> *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?*

We didn't use the 10m data for that because we were afraid that at that height the plume tilt may affect the calculation of the fire rate of spread. We didn't trust the 2m modeled temperature (first model above the ground) so we decided to use the 5m/4.5m height. Please see also our response to the second reviewer suggesting using temperature at a lower level (section 5.1).

> 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.*

The new table (new Table 1) has been added at the end of the Sect. 2 in order to clarify the location of the instruments used in this study. In the same place we also added a reference to the BAMS paper of Clements et al., containing the full summary of the FireFlux instrumentation.

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

Thank you for this comment. We agree and the confusing paragraph has been moved to the next section.

> *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?*

The typo has been corrected; it should say 43m.