

Manitou 2001-2002 Data, Version 1.2.

The version 1.2 data has some significant processing. First, in the high-speed sampling (every 15 s) of the original six burns (Reps 5 and 6) the temperature sensors suffered spiked for an unknown reason. This data was all despiked using the median-filter despiker. For all sensors, σ temperature was despiked and the value of temperature was linked to the spiked found in σ . The despiker was 3rd order (1 minute 45 seconds). Data for σ was cropped from 0 to 0.03 C (for all sensors at 10, 15, and 30 cm, except in the two high fuel loading treatments which went to 0.05 C), 0 to 0.25 C (for all sensors at 5 cm) and from 0 to 1.7, 2.0, and 0.2 C for the meadow under high, medium, and low fuels and from 0 to 1.0, 0.3, and 0.6 C for the forest under high, medium, and low fuels (for all sensors at 2 cm). The threshold for despiking was ± 0.01 C (for all sensors at 10, 15, and 30 cm), ± 0.025 C (for all sensors at 5 cm), and ± 0.35 C (for all sensors at 2 cm). Data was removed and not replaced. After despiking, there were two sensors (medium fuels in the meadow and high fuels in the forest) where the despiker destroyed a real signal in response to the fire. These data were manually restored from the pre-despiked data.

Version 1.2. also reorganized the data by removed all diagnostic data (i.e., σ , datalogger temperature and voltage, etc), reordering data to be more logical, and adding more informative labels with units.

In version 1.2, the high-speed sampling data was averaged into half-hour data and inserted into the rest of the half-hour records.

The data was also given a final cleaning. First, each σ was manually inspected for outliers to which to the data was checked for reasonableness. Most sensors had a few bad points (most notably the meadow medium-fuel loading 5cm temperature sensor).

In the case of the slash-pile (rep 1), all thermonetics heat-flux transducers were adjusted to include a temperature dependent calibration. After the experiment all transducers were sent to the manufacturer for recalibration at 20 and 200 C (the original calibration was only at 538 C). The original calibration at 538 C was removed and the new one (multiplier and offset) was used instead.

Temperature (C)	Measurement	Serial Number	Calibrations (Wm-2mV-1)			Multiplier (Wm ⁻² mV ⁻¹ C ⁻¹)	Offset (Wm ⁻² mV ⁻¹)
			20	200	538		
	Rep1Slash_HeatFlux_5cm	8011	378.60	567.90	1356.65	1.05167	357.567
	Rep1Slash_HeatFlux_10cm	8012	394.38	631.00	1262.00	1.31458	368.083
	Rep1Slash_HeatFlux_30cm	8013	504.80	772.98	1735.25	1.48986	475.003

In the case of the high-speed sampling of the slash-pile, all temperature data was gap filled and used to adjust the heat-flux calibration. Most of the heat-flux data was gap filled as well.