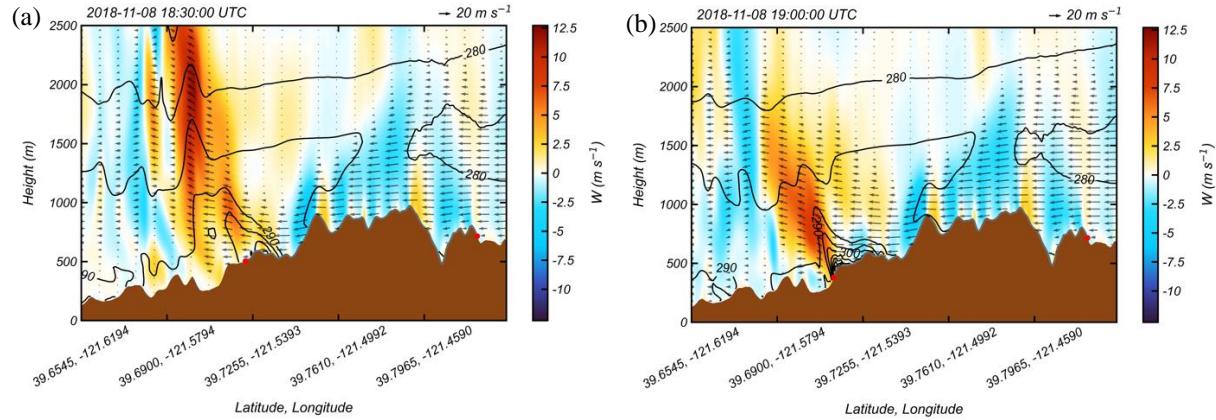
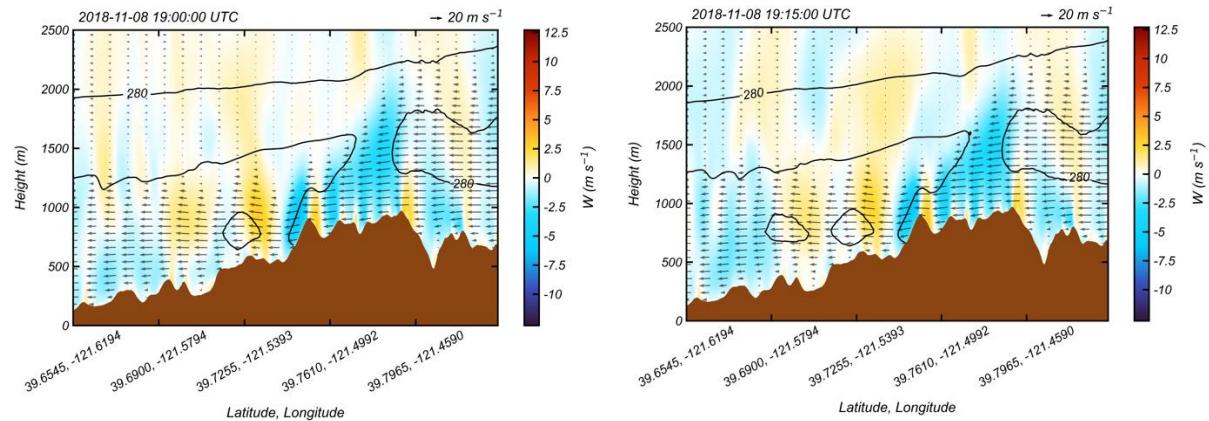


1 **Supplementary Information for “The Role of Fuel Characteristics and Heat Release**
 2 **Formulations for Coupled Fire-Atmosphere Simulation”**

5 **Content of this File**
 6 Figures S1 to S6.



9 *Figure S1.* Vertical cross sections of the simulated (shaded contour) vertical velocity (W) and (black contour lines) temperature (in K) for the Camp Fire (a) CampCan and (b) CampTGH2 cases for the same timestamp as plume cross sections in Figure 5. Arrows show the wind speed and direction, and the brown shading shows the terrain. The gray line and the red circles show the burned area and the fire head, respectively. Abbreviations are based on Table 1.



10 *Figure S2.* Vertical cross of the simulated (shaded contour) vertical velocity (W) and (black contour lines) temperature (in K) for the Camp Fire simulation without fire for the two timestamps of Figure 7. Arrows show the wind speed and direction, and the brown shading shows the terrain. The gray line and the red circles show the burned area and the fire head, respectively.

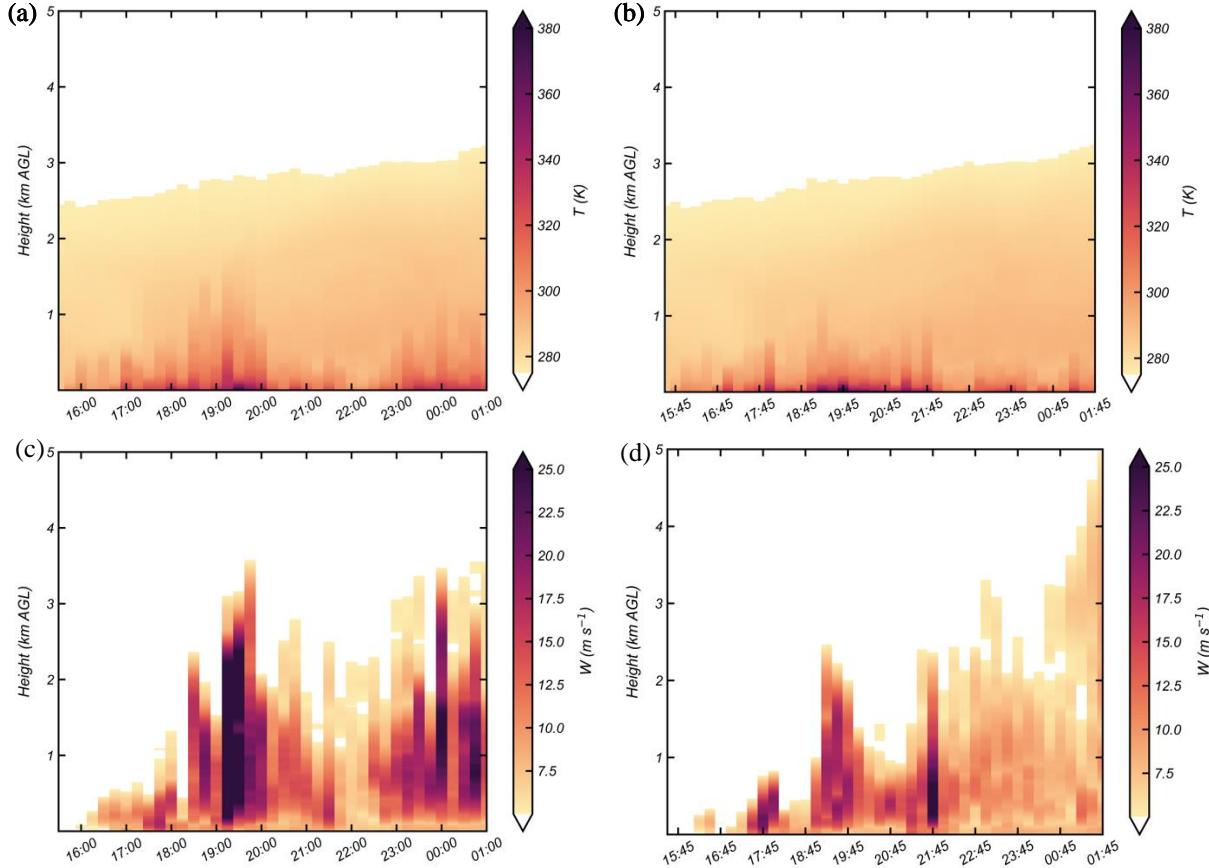
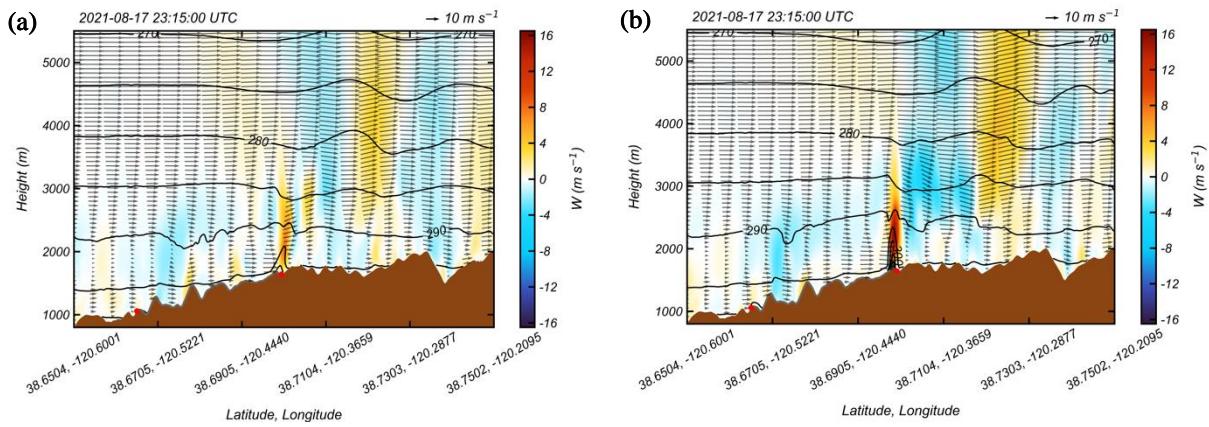


Figure S3. Time height plots of the maximum simulated temperature (T) over the simulation domain for the Camp Fire (a) CampCan and (b) CampTGH2 cases, and maximum simulated vertical velocity (W), i.e., updraft, for the Camp Fire (c) CampCan and (d) CampTGH2 cases. Abbreviations are based on Table 1.

11



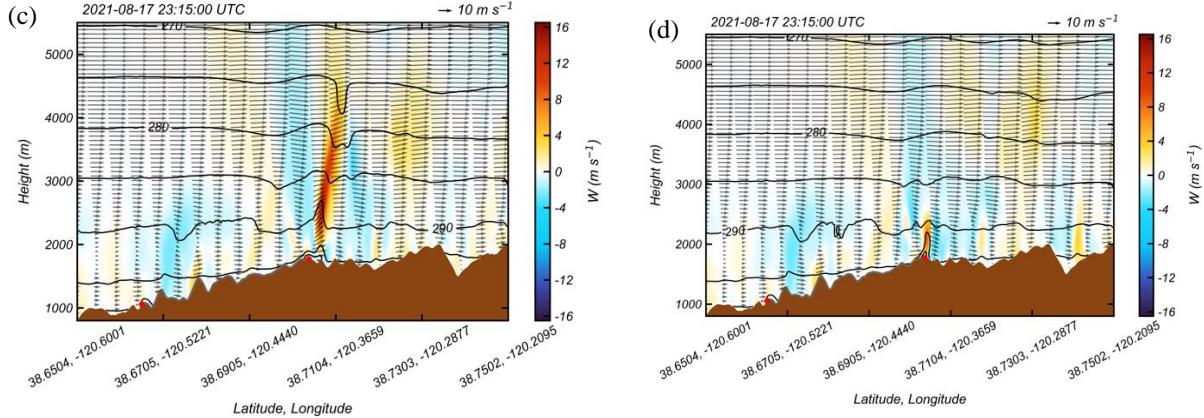


Figure S4. Vertical cross sections of the simulated (shaded contour) vertical velocity (W) and (black contour lines) temperature (in K) for the Caldor Fire (a) CalBase, (b) CalCan, (c) CalTGH1, and (d) CalTGH2 cases for the same timestamp as plume cross sections in Figure 10. Arrows show the wind speed and direction, and the brown shading shows the terrain. The gray line and the red circles show the burned area and the fire head, respectively. Abbreviations are based on Table 1.

12

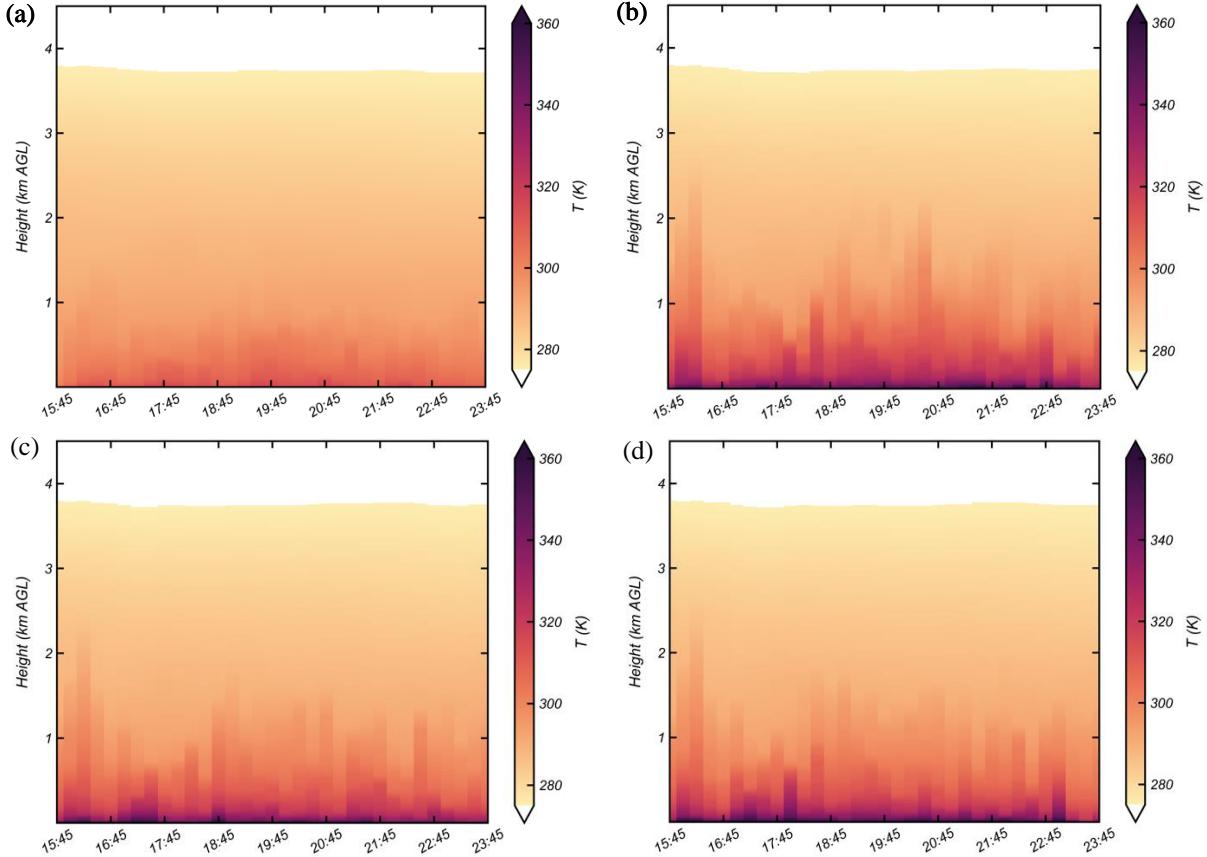


Figure S5. Time height plots of the maximum simulated temperature (T) over the simulation domain for the Caldor Fire (a) CalBase, (b) CalCan, (c) CalTGH1, and (d) CalTGH2 cases. Abbreviations are based on Table 1.

13

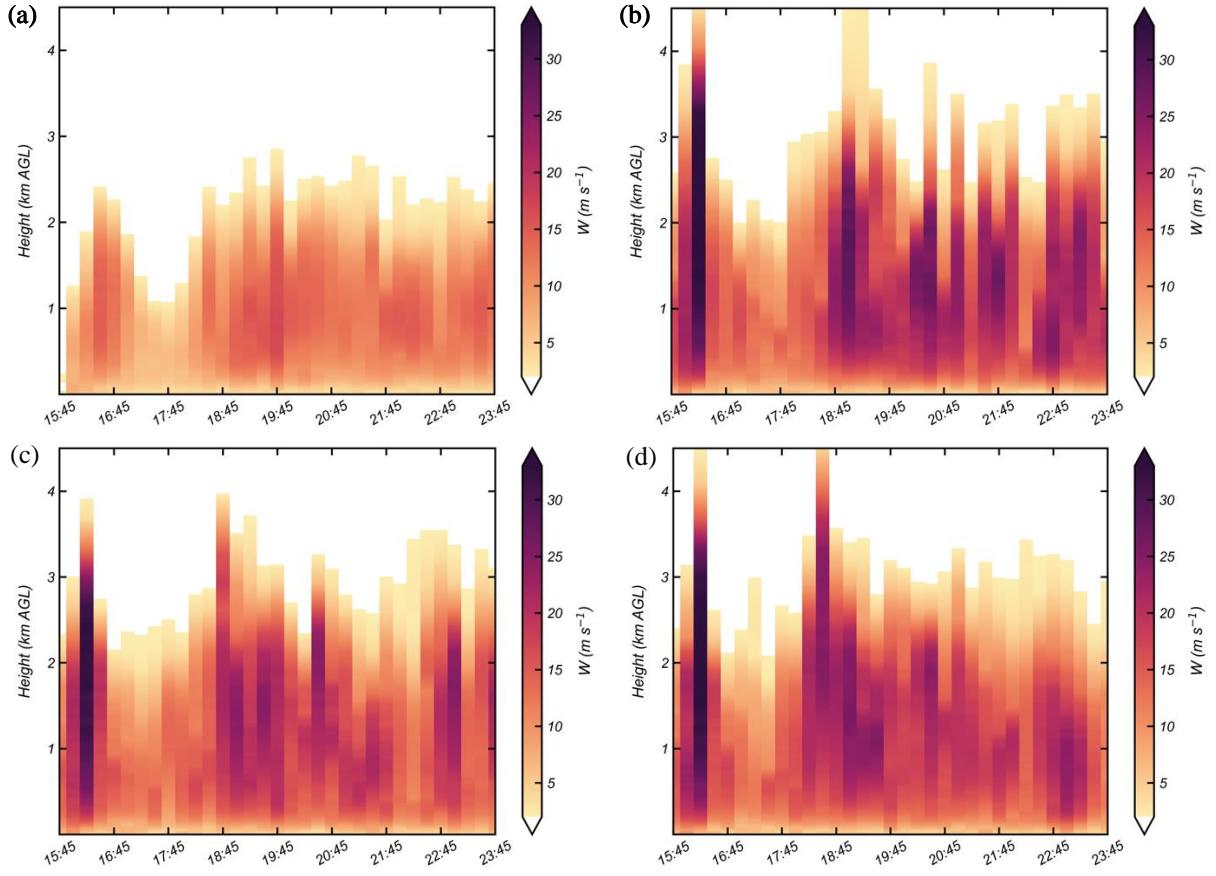


Figure S6. Time height plots of the maximum simulated vertical velocity (W), i.e., updraft, for the CalFire cases. (a) CalBase, (b) CalCan, (c) CalTGH1, and (d) CalTGH2 cases. Abbreviations are based on Table 1.