

Abstract Submitted
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Effect of Slope and Packing Ratio on the Behavior of Matchsticks Burnings¹ PRIYA KARNA, SUNIL KARNA, Union College, Barbourville, KY — The experiment was conducted to demonstrate the behavior of fire propagation on wildland using matchsticks forest model. A model forest was designed on a flame resistance clay, on top of which matchsticks were inserted and kept vertical to the ground by keeping spacing between them constant with the help of aluminum grid. The data for distance traveled by fire with time was taken at wide range of slopes from downhill of -25° to uphill of 45° on model forests of packing ratios of 0.08 and 0.04. The minimum rate of fire spread was observed around 15° downhill. The data collected from this experiment follows nature of $\tan^2\theta$ and agrees with Rothermel mathematical model of fire propagation except at high elevation above 35° for low packing ratio.

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