

Abstract Submitted
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Using Matches to Investigate Forest Fire Propagation Along a Slope¹ ABIGAIL E. AMBROSE, NIKLAS MANZ, College of Wooster — We experimentally analyzed how slope effects the propagation speed of forest fires. Using a match stick array, we created 3D-printed molds with various angles with specific conditions for the distance between neighboring match heads. We developed three types of models, in which the distance between the match heads are kept constant along the horizontal (x-model), along the vertical (z-model), and along the slope (r-model). For all three models, we determined the slope-speed relationship along the incline for upward and downward propagating fire fronts up to 45 degrees. Each model is best fitted by a different function which will be discussed.

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