Abstract Submitted
for the OSF16 Meeting of
The American Physical Society

Matchstick Forests: Studying Fire Spread On Hills Using a Scaled Model[1] ROBIN MORILLO, The College of Wooster — A scaled forest was created using matchsticks attached to an aluminum plate with a flame resistant putty. The setup allowed for one end of the the aluminum plate to be raised, creating a constant positive slope of $\tan\theta$. The use of a 3D-printed grid to align the matchsticks ensured that the matchsticks had a constant spacing and were perpendicular to the ground regardless of the angle of the aluminum plate. By lighting one end of the matchstick grid on fire and recording the flame propagation across the grid, the rate of spread of the fire R was measured. We investigated whether or not this setup could be used to predict the relationship between R and θ and could be scaled up to analyze real forest fires.

[1]The College of Wooster Physics Department

Robin Morillo
The College of Wooster

Date submitted: 31 Aug 2016 Electronic form version 1.4