PHYSICAL MATHEMATICS SEMINAR

Rain-operated foliar disease transmission

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ABSTRACT:

Plant diseases are a major cause of crop loss worldwide. They are known to be triggered by rainfalls. We here combine high-speed visualizations and physical modelling to elucidate the causal link between rain impact on foliage and pathogen spreading. We identify two dominant scenarios by which the pathogens get ejected from leaves. The leaf compliance is shown to strongly affect these mechanisms. The laws of fluid dynamics set tight limits on this epidemiological problem. They suggest a revision of the current agricultural practices in order to contain the spread of foliar diseases.

TUESDAY, SEPTEMBER 17, 2013
2:30 PM
Building E51, Room 149

Reception following in Building E17, Room 401A
(Math Dept. Common Room)

http://math.mit.edu/pms

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