



# THE UNIVERSITY OF CHICAGO

## COMPUTATIONAL AND APPLIED MATHEMATICS STUDENT SEMINAR

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### Rare Event Simulation of Intense Tropical Cyclone Pathways

THURSDAY, November 2, 2017, at 1:00 PM  
Jones 226, 5747 South Ellis Avenue

#### ABSTRACT

The present work introduces a splitting algorithm to increase simulated intensity of Tropical Cyclones (TC's).

The algorithm has the potential to improve uncertainty quantification around TC prediction and aid understanding of intense tropical cyclogenesis.

First, the splitting algorithm tests the adequacy of potential intensity theory, which predicts an upper bound on tropical cyclone intensity, based on large-scale environmental conditions.

Second, the splitting algorithm leads to precise quantification of the 95th percentile of storm intensity, within the model framework.

The splitting algorithm used in the current work are not only a novel tool for studying TCs, but they may also be applied to sampling any range of extreme weather events.