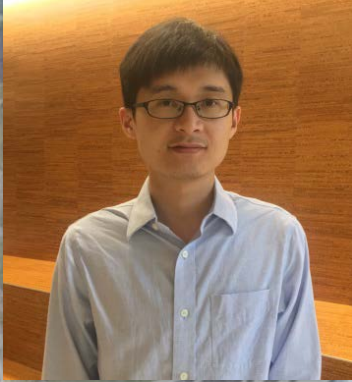


# A Hydroclimatological Perspective of Past and Future Tropical Cyclone Activity: the Role of Extratropical Transition



Dr. Maofeng Liu  
(劉茂峰博士)

*Department of Civil and Environmental Engineering  
Princeton University*

**10 September 2018**



**11:00 a.m.**

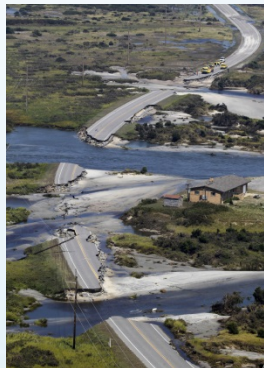


**Conference Room, 3/F,  
Mong Man Wai Building**



Tropical cyclones are responsible for numerous fatalities and vast amounts of property damages every year. The measures of tropical cyclone damages largely depend on the properties (e.g., track and intensity) of landfalling events, ~50% of which undergo a process called extratropical transition. This process provides new energy source for a storm to maintain its rotating system even at high latitudes, thereby expanding the storm hazard to a large area. The importance of extratropical transition is also highlighted by its critical role in storm rainfall enhancement, a key feature in many of the most devastating flood events associated with tropical cyclones. This talk will introduce a general framework for quantifying the role of extratropical transition in tropical cyclone risk under a changing climate. With the North Atlantic basin as the case, I will examine extratropical transition climatology using both observational data and global climate model simulations. I will also discuss the ability of dynamic models in terms of seasonal

predictions of extratropical transition activity, and the changing nature of extratropical transition activity under global warming and its implication for future storm risks. A particular focus of this talk will be the change of tropical cyclone rainfall in a warming climate and the role of extratropical transition in this change.



Enquires: 3943 9624 [essc@cuhk.edu.hk](mailto:essc@cuhk.edu.hk)