

Mini seminar series on rainfall (with special focus on NE India and Bangladesh)

Friday 6<sup>th</sup> May, 10-11:25 am, Room 309  
Coffee, tea and cake will be served.

From 3-9 May, two Japanese colleagues will visit the Department of Atmospheric Sciences. To mark this visit the Department and the TRACKS project have arranged a short seminar series to briefly present our present work and exchange ideas.

EVERYONE IS WELCOME! We hope you can join us and take part in the discussions. Dr. Toru and Dr. Murata will be available for meetings during the day on Thursday 5<sup>th</sup> May and in the afternoon of Friday 6<sup>th</sup> May. Please write to [Mathew.reeve@uni.no](mailto:Mathew.reeve@uni.no) if you would like to meet with them.

Fumie Murata (Kochi University, Japan): Characteristics of Extreme Rainfall at Cherrapunji, Northeast India based on 100 years Rainfall Data (20 mins)

Cherrapunji, the town at the southern slope of the Meghalaya Plateau, northeast India, is known as the wettest place, because it has the 12-month rainfall record of 26,461 mm. The heavy rainfall at Cherrapunji has serious social impacts through severe floods in Bangladesh. We analyze the characteristics of active spells at Cherrapunji, and discuss about cause of the large rainfall amount. We find that these active spells start when an anomalous anticyclonic circulation propagates westward from the South China Sea, and covers the northern Bay of Bengal. The westerly anomaly dominates during the active spells. The anomalous anticyclonic circulation propagates further westward and suppresses convection over central India during the active spells at Cherrapunji.

Toru Terao (Kagawa University, Japan): Observational study of monsoon rainfall over the Northeastern Indian subcontinent (20 mins)

In this presentation, we will present our research team and a short summary of our work in northeastern Indian subcontinent.

One major task is to clarify the causes of heavy rain in the region after the transition of El Nino to La Nina. After a mature El Nino, the east-west SST anomaly contrast over the Indian-Pacific Oceans dominates in the monsoon season and results in an anticyclonic circulation anomaly as a moist Rossby response to strong rainfall suppression over the western North Pacific monsoon. This response induces a northward shift of the monsoon trough around the Bay of Bengal, which enhances rainfall over the northeastern Indian subcontinent.

Also, we have set up an extensive rain gauge network consisting of about 40 stations. This data enables us to validate the TRMM precipitation radar over the northeastern Indian subcontinent.

Mathew Stiller-Reeve (Uni Research Climate, Norway): Sea breeze fronts triggering nighttime rainfall in northeast Bangladesh? (10 mins)

I will show some initial results from numerical downscaling project, where we see indications that the propagating sea-breeze front could influence nighttime convection.

Yi- (10 mins)

I will give a short overview of my research interests including: 1) island effects on airflow and precipitation over the Hawaiian Islands, 2) localized heavy monsoon rainfall over Taiwan and southern China, and 3) tropical cyclone development over the Western Pacific and the interactions of tropical cyclones with island terrain.

Pao- Rainfall extremes and typhoon activity in a changing climate (10 mins)

I will focus on (1) trends in rainfall extremes and return levels in Taiwan and (2) decadal variations in the late-season typhoon activity over the western North Pacific. For estimating return levels, we used a non-stationary generalized extreme value (GEV) distribution. An abrupt shift in the late-season (Oct-Dec) typhoon frequency occurred in 1995.