**Earth Sciences Summer Student Program 2018**

**Analyzing the observed and simulated trends in precipitation extremes associated with tropical cyclone**

分析觀測與模擬的伴隨熱帶氣旋極端降雨變化趨勢

Supervisor:

Primary supervisor: Prof. Cheng-Ta Chen (NTNU, Department of Earth Sciences)

**Project description:**

Extreme precipitation associated with tropical cyclone (TC) is often the major contributor to the huge economic lost and casualty due to natural disasters. IPCC report notes that the increase in rainfall rate associated with tropical cyclone is commonly expected as the climate warms. Nevertheless, the ability of climate models to simulate precipitation extremes associated with TCs is not well examined. Further, no detectable long-term changes in tropical cyclone rainfall rates have yet been reported. The project will use the precipitation estimates from TRMM and other high spatial-temporal resolution rainfall product and the TC best tracks to study the observed trends and variability of rainfall extremes associated with TCs. The observed characteristics will be use to validate the climate model simulation. The influences of environmental thermal and dynamical conditions on the TC rain rates will also be discussed.

**Preferred background of student candidates:**

• Senior or Junior students with good English skills are welcome.

• Strong knowledge/experience in computer (linux system) is essential.

• Good programming skills would be a plus.

**Stipend during the research period (summer 2018) would be NT$ 16,000 per month for July and August.**