

Research Plan of TAHOPE

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ABSTRACT

“Taiwan-Area Heavy rain Observation and Prediction Experiment” (TAHOPE) was originally planned to be conducted from May 2020 to August 2020 to study Mei-Yu fronts, mesoscale convective systems (MCSs), typhoons, and afternoon thunderstorms near Taiwan. TAHOPE team will join the PRECIP team (USA) and TPARC-II team (Japan) to conduct the collect intense observations for severe weather features in the vicinity of Taiwan. The main themes of TAHOPE project range from large-scale environmental influence, mesoscale convective systems, landfalling typhoons as well as afternoon thunderstorms, under the special topography of Taiwan Island with steep terrain. However, due to the outbreak of COVID-19 pandemic in March 2020, the field phase of intense observation period (IOP) is postponed until May to July 2022.

In order to analyze the intense observation dataset, which includes the data from NCAR S-Pol radar, CSU SEA-Pol radar, Micro-Pulse DIAL, NCU TEAM-R radar, CWB operational radars, extra-release sounding, NARL wind profiler, DOTSTAR dropsonde, and surface observations, the TAHOPE team will continue to propose a three-year (August 2021 to July 2024) integrated proposal of “Taiwan-Area Heavy rain Observation and Prediction Experiment–Phase II” (TAHOPE–Phase II) to the Ministry of Science and Technology (MOST) in Taiwan. This TAHOPE–Phase II integrated project will perform de-bugging, verification and quality control on the intense observation data collected in the field phase, organize an international workshop to share the preliminary research results, and publish research articles in international journals. In additions, the TAHOPE–Phase II project office will produce the TAHOPE mesoscale quality-checked dataset for the international scientific community to use.

Keywords: Mei-Yu Front; Typhoon; Mesoscale Convective System; Afternoon Thunderstorm