# Climate variability in the Asian monsoon region during the past 200 years through the data rescue activities

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Recently climate variability studies have been developed through the recovery of long-term meteorological observation data from the paper documents, called data rescue activities. We started ACRE-Japan to expand the understanding of climate change and variability in the Asian monsoon region through the data rescue of instrumental meteorological observations since the 19th century as a joint network of Japanese Universities and Institutes. It is a collaborative program with Atmospheric Reconstruction over the Earth (ACRE). Target data are daily weather station observation, lighthouses, civil and military observation and upper-air observation. Prior to the establishment of weather station, individual personnel and ship logs weather observation are useful. Tropical cyclone tracks and investigation of early instrumental meteorological observation are also included in the target. Japan-Asia Climate Data Program (JCDP) is one of the active programs under ACRE-Japan.

Here we are planning a post Monsoon Asian Hydro-Atmosphere Scientific Research and prediction Initiative (MAHASRI) program for the coming 10 years. Data rescue is one of the candidate topic of this program. Our research plan will be to understand the climate variability and extreme weather of heavy rainfall and tropical cyclone activities in the Asian monsoon region during the past 200 years. Instrumental meteorological observation during the pre-industrial revolution is available only in Europe and US. Climate information lacked in Asian monsoon region before global warming. Recently instrumental meteorological observation done by individual personnel in Asia in 19$^{th}$ century is found in archives and newspapers. Ship logs with weather observation sailing along the Asian countries in 19$^{th}$ century was found in Europe and US libraries. Therefore, data rescue in pre-industrial revolution in 19th century is our next target. Many meteorological data are also missing during the World War II will also be another target.

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