South Asia Implementation Plan for the Asian Monsoon Year-II Observation and Modelling Initiative

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The first phase of Asian Monsoon Year (AMY) was conducted under MAHASRI (Monsoon Asian Hydro-Atmosphere Scientific Research and Prediction Initiative) Project from 2007 to 2012 to improve Asian monsoon prediction for societal benefits through improving understanding of the variability and predictability of the Asian-Australian monsoon system (Matsumoto et al. 2016).

Under AsiaPEX project, new observation and modelling initiatives are emerging under Asian Monsoon Year Phase II will be conducted from 2020 and subsequent years, in which researchers and research groups who are relevant to the East, Southeast, and South Asian monsoons will participate. We now propose a South Asian implementation plan for AMY-II to develop our scientific knowledge in Asian monsoon system and to improve our ability for convincing climate projection.

Indian subcontinent has large geographical diversity in their characteristics of land surface impact and convections. We propose to focus on four different regions as follows, which have specific hydroclimatological characteristics in the Indian monsoon system: 1) Northeastern Indian subcontinent, 2) Northern Indian subcontinent, 3) Central India, 4) Western Ghats. 5) Rainshadow area and 6) Northwestern India

One of important knowledge gap in our Asian monsoon system is in the impact of the improvement of soil moisture observation on the sub-seasonal to seasonal (S2S) scale weather prediction. So, we will focus on land surface impact on the S2S predictability. We will focus on the onset process of the Indian monsoon associated with pre-monsoon precipitation over the Northeastern Indian subcontinent, The COSMOS system is a newly developing observational system for the soil moisture based on the cosmic ray sensor technology, recently established by IITM. It will also play a key role. Through this activity, we will obtain consistent and more accurate surface soil moisture impact on monsoon precipitation.