As the monsoon moves across Asia, there are rainy and dry spells, which are important for the regional agriculture and economy. These spells are closely tied to the northward propagating intraseasonal oscillation (NPISO).

The figure shows rainfall (contour interval = 2 mm/day) and SST (°C, color shades) associated with the NPISO over the Indian Ocean: Panel a represents results from a simulation with the ECHAM4–Wang-Li-Fu atmosphere-ocean coupled model; Panel b represents results from an ensemble of ten stand-alone ECHAM4 runs forced with the daily SST obtained from the coupled model. In the coupled model simulation, the NPISO is closely related to SST, with higher SST leading stronger rainfall by about 10 days; in the stand-alone atmospheric model, forced with daily SST, the NPISO is weak and almost in phase with the SST.

Observations from TRMM data (Vecchi and Harrison 2001) support the coupled model results (panel a). Since forcing an atmospheric model with daily SST does not lead to a realistic simulation of atmospheric intraseasonal variations, the results indicate that the NPISO is coupled to Indian Ocean SST and rainy spells are predictable from the SST.