It is well known that the Asian monsoon was enhanced in continental interior during the mid-Holocene (6ka) both from the paleo-proxy and the modeling studies. Whereas there are many attempts to understand the monsoon change over tropical Indo-Pacific Ocean regions with paleo proxies like fossil coral, there has not been much from the modeling side. Although the insolation forcing is zonal, paleoclimate proxies suggest heavier (more depleted) oxygen water isotopic ratio over the Pacific (Indian) sector, suggesting the saline and/or cooling (fresh and/or warming) over the Pacific compared to the present day.

We have simulated 6ka and pre-industrial time slice experiments to investigate how the water cycle changed using an Atmosphere-Ocean coupled General Circulation Model, MIROC3 and an atmospheric part of MIROC3 (AGCM). In addition, in order to compare more directly with proxy data, simulations using the AGCM coupled with water isotopic module were conducted. The simulated isotopic information in the AGCM was given to an ocean part of MIROC3 (OGCM) and the isotopic ratio of sea water was simulated. The modeled oxygen isotopic ratio showed generally consistent change with the proxy data.