AOGS 2005

Response of Asian Monsoon to the 8.2 ka Cold Event: Evidence From Monsoon Upwelling Record

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The strength of Asian monsoon has been varied on glacial and interglacial time scales as well as on century to millennium time scale. The causes for these variations are linked to solar insolation changes associated with Earths orbital variations on 10^3 to 10^5 years timescale and El Nino Southern oscillations and abrupt climatic events in the North Atlantic on century to millennium time scale. In this context, here it is examined the response of Asian Monsoon to the 8.2 ka cold event. This cold event has an amplitude of about one half that of the Younger Dryas cold event and widely documented in the both high and low latitudes. The 8.2 ka cold event is believed to have been caused by a catastrophic glacial-lake melt-water event, which resulted in a cold climate episode in the region. Sea surface temperature estimates based on census of planktonic foraminifera from the Ocean Drilling Program Site 723A also documents a cold pulse around 8.2 ka. The monsoon upwelling indices data from the same site show a strengthening phase of monsoon started around 14 ka and continued to main maintain the strength until 6 ka except a drastic drop around 8.2 ka. During the strong phase of monsoon a drastic drop of monsoon strength around 8.2 ka as evident from the monsoon upwelling indices indicates a possible link between the Asian Monsoon and high latitude abrupt climate shifts. Implications of high latitude climate short span events on the Asian Monsoon will be discussed.