Geophysical Research Abstracts, Vol. 7, 04732, 2005
SRef-ID: 1607-7962/gra/EGU05-A-04732

Dominant convectively coupled 15 days periodicity Kelvin waves mode and its influence during the West African monsoon onset

F. Mounier (2) and S. Janicot (1)

(1) Laboratoire d'Océanographie et de Climatologie par Expérimentation et Approche Numérique (LOCEAN) /Institut Pierre Simon Laplace (IPSL), Institut de Recherche pour le Développement (IRD), Paris, France, (2) Laboratoire de Météorologie Dynamique (LMD) / Institut Pierre Simon Laplace (IPSL), Ecole Polytechnique, Palaiseau, France (mounier@lmd.polytechnique.fr / FAX : +1 69 33 30 49)

The dominant mode of convection at intra-seasonal timescale in the West African summer monsoon is of about 15 days periodicity. Over Africa, It depicts a stationary modulation of convection in the ITCZ without any significant modulation of its latitudinal location. However, over the tropical belt, it is associated to an eastward propagating modulation of convection strength even visible on scale as small as mesoscale convective system and also to a modulation of the zonal wind component over the eastern equatorial Atlantic.

Evidences during June to September 1979-2000 period highlight the implication of convectively coupled Kelvin waves type propagating over the Atlantic and embedded into a larger scale circulation during the period close to the onset. Moreover, 15 years over 22, this mode picks coherently with the African monsoon onset, which has been dated following Sultan and Janicot methodology. As being the dominant intra-seasonal mode, these results are of special interest and provide new issues to the understanding of the monsoon onset.