

DIURNAL VARIATION OF THE RADIATIVE HEAT FLUXES OVER THE SEA SURFACE OF NORTHERN ARABIAN SEA

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ABSTRACT

The dynamic coupling of air-sea fluxes depends on their temporal and spatial variability. In this paper diurnal variation of radiative heat fluxes (short-wave radiation, Q_i and long-wave radiation, Q_b) that contribute significantly to the transfer of fluxes between atmosphere and ocean is studied from the data collected from the time series stations under the north Arabian Sea Environment and Ecosystem Research (NASEER) programme (1992-1994).

The computation of incoming short-wave and outgoing long-wave radiation was performed using the standard bulk flux formulae. The study revealed that during the northeast monsoon (NE) in the northern Arabian Sea, maximum short-wave radiations were between 15 W m^{-2} and 25 W m^{-2} , whereas in southwest monsoon (SW), it varied between 25 W m^{-2} and 37 W m^{-2} . The long-wave fluxes showed that except in January 1992, the long-wave radiation latitudinally increased from north to south. The mean of net heat gain over the northern Arabian Sea during the recording periods of 1992 were negative, whereas in the recording period of 1993 and 1994 the values were positive. The negative values indicated that heat was lost to the atmosphere in the year of 1992, while in 1993 and 1994, the northern Arabian Sea received more heat.

Key words Arabian Sea, radiative heat flux, NASEER