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*Radon daughter's radioactivity levels in the Arabian Sea as indicators of airmass mixing**

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ABSTRACT

Measurements on radon daughter's activities in the Arabian Sea were carried out during the period 19 May to 9 July 1973, under the joint Indo-USSR MONEX-73 project. The data were collected on board the ships of the Indian Navy cruising between 19°N-21°N, within longitudes 60°E-73°E and the two USSR vessels *Okean* and *Priliv* cruising between latitudes 0°-10°N and 10°N-18°N, respectively. The results show that there is a significant increase in radon daughter's activity at about 19°N-21°N, the average level being of the order of about 8 pci/m^3 as compared to 1-2 pci/m^3 at lower latitudes. This is explained, on the basis of synoptic charts and available sounding data, as being due to the wind and pressure pattern prevailing during the monsoon months which result in the transport of continental air from Arabia and Pakistan and its mixing with the maritime monsoon airmass of southern hemispheric origin. The significant increase in radon activity on some days of the cruise was mainly due to the existence of disturbances like depressions, cyclonic storms, etc, over the north Arabian Sea, or due to the passage of western disturbances at a relatively lower latitudes (along approximately 25°N) and their associated circulation patterns. These phenomena favour significant transport of continental air from the north and west. The mixing of this continental airmass with the airmass of low radon concentrations results in increasing the average randon levels from 1 to 8 pci/m^3.

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