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Isotopic characteristics of rainwater from the Minicoy Island, India

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The Lakshadweep Archipelago consist a group of Islands in the Arabian Sea lies nearly parallel to the south western Indian coast. During the months of May-Jun the moisture laden air mass flows through this region and then hits the Kerala coast to initiate the monsoon season in India. Isotopic analysis of precipitation has been shown to be a useful tool to study the hydrological and atmospheric processes, but to our knowledge no such work has been done on Lakshadweep rain water. Since the rainfall in this island is expected to be almost free from continentally generated moisture, their isotopic study is likely to provide information of moisture source that is purely driven by the oceanic processes. With this perspective isotopic analysis of rainwater at Minicoy Island has been carried out on daily scale for the year 2015, starting from June to December. The $\delta 18O$ varied from 0 to -5‰ during the monsoon season (JJAS), thereafter it showed significant depletion, ranging from -3 to -14‰. The post monsoon period depleted $\delta 18O$ values indicated a different moisture source, presumably from the Bay of Bengal, also supported by the back trajectory analysis. The local meteoric water line has been established as $dD = 7.34 \delta 18O + 8.70$, ($R^2=0.98$; $n=63$; $p < 0.0001$). The slope being less than that of the global meteoric water line implying significant amount of rain drop evaporation, which is also supported by a strong inverse correlation between the $\delta 18O$ and d-excess of the Minicoy rain water. The $\delta 18O$ showed strong inverse correlation with the 10x10 TRMM derived rainfall data ($R^2= 0.28$, $n=63$, $p < 0.001$). The result is likely to be useful in understanding the complex behavior of the rain water isotopic variability observed in the Western Ghat mountain range of the south west coast of India.

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Analysis of Mpn Test (Bacteriological) and Some Physico-Chemical Parameters of Dori Pond, Alnavar, Dharwad Tq./Dist., Karnataka, India

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Now-a-days water is being highly polluted with different harmful contaminants. Due to increased human population, industrialization, use of fertilizers and manmade activities made water more pollutant. So people are under tremendous threat due to sudden undersigned changes in the physical, chemical and biological characteristics of air, water and soil. Now it has been necessary to check the water quality regularly, as human population suffers from varied water borne diseases like diarrhea, jaundice, typhoid, etc. According to rough estimation more than 15 million deaths worldwide result annually from water borne infections. This paper deals with MPN Test and Physico-Chemical parameters analysis of Dori Pond Alnavar, Dharwad Tq./Dist., Karnataka, India. Monthly changes in MPN Test and Physico-Chemical parameters such as Water temp, pH, TDS, Electric conductivity, CO_2 , DO, Alkalinity, Chloride, Total Hardness, PO_4 , BOD and COD were analysed for period from May 2012 to April 2013. All parameters are within the permissible limit according to IS 10500-1991 except MPN Test (Bacteriological). MPN Test results are higher than the permissible limit according to IS 10500-1991.

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