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Spatial Variation of Dew over India

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Dew harvest systems - devices to condense and collect dew water - have been developed for use in arid coastal region of the north-west India. These are installed over building roofs, over open ground and along boundary walls of large properties. Several installations, some as large as 850 m2 condensing surface, have been functioning in the region for several years. There is potential to deploy these in other areas where dew occurs and water is in short supply. However, lack of reliable data on dew occurrence hinders their adoption and diffusion. Indian Meteorological Department (IMD) monitors dew deposition using Duvdevani gauges at 79 locations in the country. Data includes dew fall amount over a six month span (October to March), number of dew nights. The north-east region has the highest dew resource. Other parts that have high accumulation are along the coast. Using data from 79 locations, spatial variation of dew amount has been characterized using variogram. Spatial clustering has been done to indicate areas with similar accumulation. Kriging is used to determine expected dew accumulation by extrapolation in areas for which measured data is not available but which lie near one or other monitoring station. The results of this analysis would be of use to those who need to assess the potential of dew harvesting in various parts of India especially in coastal zones.