Comparison of rainfall from ordinary and automatic rain gauges in Karnataka

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ABSTRACT. The establishment of a network of AWS is one of the very important components under modernization programme of IMD. This study discusses the comparison of 24 hrs accumulated rainfall from ordinary and automatic rain gauges in 11 co-located stations of Karnataka. Results show that Bangalore, Gadag, Honnavar, Dharwad, Haveri, Tumkur, Bidar and Kodagu have bias within ±5 mm exhibiting good performance while Chamaraj nagar, Raichur and Bijapur have bias within ±20 mm. The correlation coefficient between two datasets is strong and positive for all the stations except Chamarajnagar, Raichur and Bijapur. The t-test shows that the difference between means of two datasets is not statistically significant at 95% confidence. Further, AWS data is able to show changes in various meteorological parameters along with the movement of the cyclone. This has highlighted the utility of AWS data in extreme weather events like a tropical cyclone.

Key words – Rainfall, Ordinary rain gauge, Automatic weather station.