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Significance of Statistical Methods for Generating Ground Water Level Data of Predefined Monitoring Stations in Maharashtra

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Abstract

Ground water monitoring is essential to ensure long term sustainability of aquifers for safe and stable water supply and also to formulate appropriate policies accordingly. Periodic monitoring schedules are planned in conformity with climatic variations in a hydrologic cycle to evaluate the dynamics of ground water regime comprehensively and consistently over the time. Break in monitoring schedule due to any reason may hamper the long-term analysis trend, thus it is essential to generate the data and fill the data gap arisen out of uncontrollable conditions. Enforced lockdown and closure of inter district boundaries due to present Pandemic Covid-19 situation, it could not be possible to monitor the water level data of CGWB monitoring stations spread across the State of Maharashtra. The present paper deals with the generation of ground water level data for CGWB Ground Water Monitoring Wells (GWMWs) for the same period and hydrogeological setup from the data collected by the Groundwater Surveys & Development Agency Department (GSDA), Govt. of Maharashtra, by Statistical methods. The 't' test and 'Z' test, the inferential statistics methods are used to determine the Significance and Confidence level between the measured and generated data groups.

Keywords: Ground water level, Ground water monitoring wells, Interpolation technique, Generated data, Statistical methods, Maharashtra.
