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Books :

Gupta, S.K., 1999. " Engineering Hydrology", Tata Mc Graw-Hill Publishers, New Delhi

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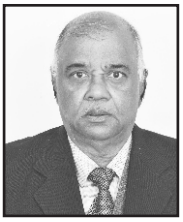
MESSAGE FROM EDITOR'S DESK



Globally, 2 billion people (26% of the population) do not have safe drinking water and 3.6 billion (46%) lack access to safely managed sanitation, according to the report, published by UNESCO on behalf of UN-Water. Between two and three billion people experience water shortages for at least one month per year, posing severe risks to livelihoods, notably through food security and access to electricity. The global urban population facing water scarcity is projected to double from 930 million in 2016 to 1.7–2.4 billion people in 2050. The growing incidence of extreme and prolonged droughts is also stressing ecosystems, with dire consequences for both plant and animal species.Protecting and preserving this precious resource for future generations depends on partnerships. The smart management and conservation of the world's water resources means bringing together governments, businesses, scientists, civil society and communities, including indigenous communities, to design and deliver concrete solutions

In the present Volume 42, Number 02, April 2022, the journal broadly covers R&D studies related to the treatment of distillery effluents, the interaction of Uranium with other contaminants in groundwater, groundwater flow simulation, groundwater recharge, and its connection with precipitation, flood frequency analysis, and effect of population density and rainfall on the spread of COVID-19. The first study reports removing color from distillery spent wash using packed bed reactor studies in batch mode. The reactor bed with soil and the soil-bagasse-sand combination was developed, providing a maximum of 90% and 95 % color removal efficiency, respectively. The authors conclude that soil can be used as an effective and economically viable medium for treating distillery spent wash, owing to its natural microbiota and physical adsorption properties. The second work attempts to understand the causes of the occurrence of Uranium and its geochemical behavior with other contaminants. Groundwater samples were collected and analyzed for Uranium, trace metals, and other physico-chemical parameters. The uranium concentration was found to vary from 0.37 µg/l to a maximum of 54.63 µg/l with a mean of 9.05 µg/l. Its concentration when more than 30 µg/L was found to be in positive correlation with Nitrate, Sulphate, and Potassium. The third study reports on the changes in groundwater recharge and its relation with precipitation characteristics over the Attappadi Critical Zone Observatory (CZO). A modeling scheme was developed by coupling the vadose zone model with the groundwater model. The results indicate that the annual recharge flux computed from normal rainfall is 7.8%, and the annual recharge flux computed from synthetic rainfall is 5.1%. In contrast, the runoff generated from the synthetic rainfall was higher than the normal rainfall, indicating that the rainfall pattern plays a major role in the groundwater recharge process. In the fourth study, flood frequency analysis was carried out on River Tapi at the Ghala Hydrological observation site in the Lower Tapi Sub-basin using Gumbel's distribution. The application of Gumbel's distribution indicates a perfect fit of observed data series. The 1 in 100-year return period recommended for the design of river control works was found to be around 26884.743 cumecs. The fifth study develops an RBG model to check the geographical effect of population density and rainfall received from March to August in different states of India, which also corresponds to the COVID spread period. The model depicted a geographical correlation between rainfall and population density on the spread of COVID-19 in India. The authors recommend an efficient mitigation strategy to combat COVID-19 in such monsoon peak situations. In the last study, a Meshless Local Petrov Galerkin Method (MLPG) was adopted for the simulation of groundwater flow in a confined aquifer. The Improved Interpolating Moving Least Squares (IIMLS) scheme is implemented as the approximation function. A simulation model is developed in 2D using MATLAB to solve confined aquifer problems. This study concludes that MLPG is an efficient method for simulating groundwater flow.

Raj Deva Singh

(R.D. Singh)

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Journal Article:

Rao, S.S., 1979. "Flood Control Regulation of Reservoirs", Journal of Indian Water Resources Society, 11(2), 19-26

Chapter in Book or Paper in a Proceedings:

Singhal, S.P. and Kasliwal, R., 1991. Calibration of Conceptual Catchment Models, in Applied Water Resourcing Planning, P.V. Narasimha (Editor). Tata Mc Graw Hill Publishing Co. New Delhi.

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