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REGIONAL PARAMETERIZATIONS OF STOCHASTIC MODEL SIMULATION ON HIGH RESOLUTION TEMPORAL RAINFALL: CASE STUDY BOGOTÁ (COLOMBIA)

Hugo Rico T. *, Ana Santos R. †, Eddy Herrera D. ††, Nelson Obregón N. †††

* Pontificia Universidad Javeriana, Bogotá, Colombia
E-mail: hrico@javeriana.edu.co
†Universidad Nacional de Colombia, Bogotá D.C. Colombia.
E-mail: acsantosr@unal.edu.co
††Pontificia Universidad Javeriana, Bogotá D.C. Colombia,
E-mail: eherrera@javeriana.edu.co
†††Geophysical Institute of Javeriana University. Pontificia Universidad Javeriana
E-mail: nobregon@javeriana.edu.co

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Abstract

Bogotá (Colombia) has been recognized for its precipitation variability at different time and local scales. Assuming a single daily precipitation data could elevate the uncertainty in the performance of hydraulic structures design (Eg. draining pipes as sewerage, etc). Hence, the knowledge of the precipitation peaks and their times of occurrence are important besides for the precipitation characterization also to give the designer a better understanding for structures design. Probe of it is that some robust models for sewage designs require of a subtime resolution for time discretization on the precipitation records. In this way stochastic models for desegregation based on point process are used and wide known among the hydrologic community. Thus, is intended to research the behavior of the Neyman-Scott model not only at the point level through parametric calibration at different time scales but also as a method of regionalization on an area of interest. For the implementation of this methodologist it has time series precipitation of some rainfall stations locates in the urban area of Bogotá and its surroundings. The contribution of the research lies in the functionality of can count within a continuous space at different scales, with the stochastic models parameters of high temporal resolution rain. Finally, the results found in the case study of time series in Bogota city, suggest that not only exists variability on the point scale, but also it is possible to deduce the simulation models parameters in place where they have not been measured.