PROCESSING AND CORRECTION OF SUB-HOURLY HYDROMETRIC SERIES OF THE ROCHA RIVER BASIN

Mauricio F. Villazón, Leónidas Guzmán

ABSTRACT

The Rocha River basin is one of the most important basins in the department of Cochabamba because it is home to approximately 76% of the department's population. The Rocha River is an urban ecosystem because it is located within the city. Due to its rugged topographic relief, it generates a large amount of water during the rainy season. On the other hand, during the dry season, this river has a small flow from liquid discharges, domestic and/or industrial wastewater. The objective of this work was to obtain continuous series of flow rates in 3 sections of the Rocha River at a sub-hourly level for the period 15-Dec-2017 to 27-Apr-2023 by collecting, processing and, where necessary, making the necessary corrections to the measured levels to later convert them into flow rates by means of H-Q curves. Once the flow rates were obtained, these together with the precipitation were used to calculate the runoff coefficients of the 3 sub-basins of study (El Abra, Cajón bridge and Pico de Loro bridge), obtaining values of 4.5%, 5.4% and 19% respectively. The results of an empirical extremes analysis for a return period of 5 years with flows measured every 15 min are also presented, obtaining flows of up to 16 m3/sec for the El Abra station, 52 m3/sec for the Puente Cajón station and 64 m3/sec for the Pico de Loro station.

Keywords: Recession Conservation, Rocha-Cochabamba River, Continuous Series of Sub-hourly Flows, Discharge Curve.

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