

Estimation of pre-burst rainfalls for design flood estimation in Australia

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Abstract:

Traditionally, according to Australian Rainfall & Runoff (1987), design events represented the burst of a complete storm event (i.e. the period with the maximum depth for a specified duration). Parameters such as the initial loss are then calibrated to complete storm events, and transformed into a burst initial loss value. This can lead to large biases in design flood estimates; therefore it would be beneficial to include the pre-burst rainfall period in a design approach. Before the pre-burst rainfall depth can be incorporated into a design flood estimation approach, the pre-burst rainfalls need to be regionalised throughout Australia. As a part of the ARR revision projects, this study maps the pre-burst rainfall depth across Australia so that a single design value can be extracted for any given location. Results show that the pre-burst rainfall depth varies with critical burst severity, critical burst duration and geographic location throughout Australia, with the values being most sensitive to the critical burst duration and geographic position.

Due to production deadlines, this paper is currently unavailable.

The paper will become available on the local paper server and on the ARR website (<http://www.arr.org.au/>) at a later date