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Analysis of hydrological variability in observed rainfall-runoff patterns in Peninsular Malaysia

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The spatial variability of observed trends in rainfall patterns over the last few decades and its effects on the spatial and temporal variability of runoff in some large river basins of the Peninsular Malaysia were investigated. The rainfall variations are not uniformly distributed in the study area, both temporally and spatially, resulted some regions in an imbalance of water resources availability in the country and subsequently water problems (i.e. droughts and floods) were reported more frequent than before. The observed rainfall-runoff relationships were analyzed due to various hydrometeorological impacts, i.e. (1) Northeast Monsoon (NE), (2) Southwest Monsoon (SW), and (3) impacts of El Nino-Southern Oscillation (ENSO). The results indicate NE monsoon gave higher impact to the observed rainfall-runoff patterns, meanwhile ENSO was seen as dominant factor modulating the Peninsula rainfall trend.