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**Impact of land-use intensity on evaporation and surface runoff: Processes and parameters for eastern Burkina Faso, West Africa**

Analysis of the surface flux measurements during the first long-term eddy covariance campaign over the savanna vegetation in West Africa showed a clear pattern in the temporal dynamics of actual evaporation, which was related to moisture availability. Empirical models were developed to predict these temporal dynamics. Also, scale effects of surface runoff were investigated in three watersheds with different land use, and a decrease of surface runoff with increasing slope length was observed. The results are valuable inputs to eco-hydrological and surface runoff models in the semi-arid region of West Africa.