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New findings about the complementary relationship of evaporation

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New theoretical considerations indicate that the complementary relationship (CR) of evaporation is inherently asymmetric when the time rate of change between actual and apparent potential evaporations is considered. The theory also estimates the extent of this asymmetry as a function of the surface temperature and predicts that a symmetric CR, independent of the surface temperature, can only be expected when no energy exchange between the source of the apparent potential evaporation process and its surroundings occurs, a rather unrealistic situation. The derived asymmetric CR is employed for operational evaporation estimations. The parameters of the proposed practical evaporation estimation model are from the Priestley-Taylor and Penman equations.