



*Department of Geography, National Taiwan University,
Taipei, Taiwan*

Dear Editor,

Enclosed please find the manuscript entitled “**Runoff Generation Signaled by Deviation Budyko Framework**” for your consideration for publication in Water Resources Management.

This study addressed a key gap in understanding how deviations in water-energy dynamics affect hydrological processes, especially under short-term fluctuations. We used SWAT to simulate the stream discharge and different runoffs in a meso-scale watershed in Ethiopia. Later, we applied Budyko framework to determine water-energy dynamics by evaporative and aridity index. Furthermore, we examined the effect of deviations in the evaporative index on runoff generations. Our findings revealed that (1) SWAT performed the discharge satisfactorily, and CN, available water capacity, and groundwater delay coefficient are dominant parameters in this Ethiopian watershed; (2) 86% of the variance in the Budyko governing factor can be explained by the vegetation cover and catchment slope; (3) deviations in the evaporative index significantly influence surface runoff, lateral flow, and return flow, particularly in dry years, which has implications for water resource management. The manuscript has not been published or submitted elsewhere, and all authors have approved the submission.

Please feel free to contact me if you have any questions. Thank you for your assistance.

Sincerely,

A handwritten signature in Chinese characters, reading '黃詠川' (Huang River-Chuan).

Jr-Chuan (River) Huang, riverhuang@ntu.edu.tw
Professor, Department of Geography, National Taiwan University, Taiwan