

REVIEWER'S REPORT

Manuscript No.: IJAR-55318

Title: Evaluating the ParFlow-CLM Integrated Model in one Dimension: Revisiting Water and Energy Budgets in the Cultivated Sahel (Wankama, Niger)

Recommendation:

Accept as it is

Accept after minor revision.....

Accept after major revision

Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality		Good		
Techn. Quality	Excellent			
Clarity	Excellent			
Significance	Excellent			

Reviewer Name: Dr. Sumathi

Detailed Reviewer's Report

1. Hydrological modeling uses computer simulations and mathematical equations to represent and predict water movement in natural systems like watersheds, simulating processes like rainfall, runoff, evaporation and groundwater flow to help manage resources, forecast floods, assess climate change impacts, and plan water infrastructure.
2. Models range from simple conceptual types to complex physics based ones, incorporating data like weather land use and geology to understand water availability, quality and system responses to stress.
3. Semi arid ecosystems are water limited environments receiving 10-20 inches of rain annually, supporting drought adapted grasses and shrubs rather than forests, characterized by highly variable rainfall, water stress and rapid ecosystem responses to precipitation pulses, making them vital for global carbon cycles despite their lower biomass than humid regions, often featuring distinct vegetation patterns like spots and labyrinths.
4. Water balance is the principle that water inflow must equal water outflow plus any change in storage within a system, crucial for ecosystems, hydrology and the human body, involving inputs and

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outputs to maintain stable levels, preventing shortages or floods, with the body balancing intake and loss via hormones and electrolytes like sodium.

5. Key words are good to understand.
6. Methodology and research parts are excellent with significant points.
7. Summary points can be included.
8. References are good.
9. After a small corrections good to publish in your journal.