

Response to the editor:

We completely agree with the Editor's helpful comment. Singling out the exact year 2003 overstates a sharp threshold effect, whereas the data reflect a broader multi-year climatic shift. We have carefully revised the manuscript by replacing specific references to "2003" with "early 2000s" in the Abstract, Section headers (L422), and Conclusion to emphasize a transition period toward a moister baseline rather than an isolated anomalous event.

Specifically, the following adjustments were made:

- Abstract: Updated to "Crucially, a transition phase **in the early 2000s shifted** the regional baseline from persistent late-20th-century deficits into a moister "new normal," thereby culminating in the record-breaking August 2024 anomaly."
- L422 (Header): Revised to "**The early-2000s hydro-climatic transition:**".
- Conclusion: Adjusted to "**This long-term transition, evident since the early 2000s, is characterized by a gradual trend toward increased atmospheric moisture content, with a +59.2% rise in integrated water vapor transport (IVT). This altered baseline, which has grown wetter over recent decades, has maximized regional vulnerability** to extreme monsoon precipitation, structurally shifting the regional hazard paradigm from perpetual hyper-aridity to severe hydrological risks."

Additionally, we have thoroughly audited and corrected the References section to ensure full compliance with the journal's formatting requirements and guidelines.

We thank the Editor for this final refinement, which strengthens the nuance and precision of our study.