

Interactive comment on “Hydrological, chemical and isotopic budgets of Lake Chad: a quantitative assessment of evaporation, transpiration and infiltration fluxes” by C. Bouchez et al.

S.P. Good (Referee)

stephen.good@oregonstate.edu

Received and published: 5 December 2015

The paper submitted by Bouchez et al, uses multiple geochemical tracers to estimate the sub-components of the hydrologic balance for lake chad. The research topic is relevant from sociological, hydrologic, and ecological perspectives. The methods employed by the authors are also very thorough, and I support the publication of this paper.

Here are some specific points worth addressing: P11175-L2: Why not just write 20th century? P11175-L7: Lake surface AREA oscillations? P11175-L19: Does endorheic not mean that there is no outlet? P11182-L25: According to eq (2) ΔE is a calcu-

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper



lated value, not an input. Humidity and delta_A are inputs? L11183-L8: Is this not four locations? Kaloma and Kirenowa not shown on fig 1. P11184-L13: What happened to figure 2 and 3? Something is out of order. P11189-L12: Shouldn't the Q_SN be positive into the north? Also check eq 6 and 7 P11191-L11: Did you consider the effects of high salt concentration on fractionation during evaporation? There is some uncertainty about different kinetic fractionation factors, how was this addressed? P11199-L13: Please discuss here (or elsewhere) the implications of a constant F_I and F_E. It is possible that infiltration is linked to surface area or lake depth. Similarly, there may be seasonality in vegetation abundance that influences transpiration rates. F1: What does the elevation colorbar correspond to? An outline of the Lake Chad Basin would be helpful on A. F8: Why is the lake level upside down?

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 12, 11173, 2015.

HESSD

12, C5429–C5430, 2015

Interactive
Comment

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper