

This paper developed the switching method of h - and θ -form of Richards equation to lower the non-linearity in the soil-water and groundwater coupling system and the iterative feedback coupling scheme to reduce the coupling errors. Four numerical cases were employed to address three concerns arose using the iterative feedback coupling method.

This work tries to find the tradeoff between the modeling accuracy and the computational cost of the soil-water and groundwater coupling system. The method presented here seems promising in the application of large scale problems.

Nevertheless, I have some concerns about the 'real' modeling accuracy when using the proposed method. You took the simulation results of HYDRUS1D, MODFLOW-VSF (Thoms et al., 2006), and HYDRUS package for MODFLOW (Seo et al., 2007) as the 'truth'. Thus, when you compare the simulation results of the proposed method and the "truth" (e.g., Figure 7), it is difficult to determine which method is better.

The paper is well written and structured. Some suggestions are detailed as below.

Title: HYDRYS → HYDRUS

Line 108: soil capacity → soil water capacity

Line 148: " ... is suggested to 0.4-0.9" → " ... is suggested to be 0.4-0.9"

Line 163-167 (Figure 1): the space- and time-splitting strategies should be illustrated in a more detail way. You said that coupling models at different scales should deal with the inconsistency in spatial and temporal discretization, however, there is not too much context illustrate how such inconsistency was handled in your coupling system.

Line 253-254: there is no C_i and Δz_i in Eqn. 20. The description of C_i and Δz_i seems redundant.

Figure 6: what is the difference between coupled h-form RE and HYDRUS1D?

Section 4.2: You use both the "Cumulative mass balance errors" and "coupling errors" in the section 4.2 multi-scale water balance analysis, is there any difference between these two terms?

Figure 8: On the basis of the truth, three different methods (stepwise method, iteratively linear method, and non-iteratively linear method) were compared in Figure 8. What kind of method was used for the 'truth' (HYDRUS1D)?

Line 373: $\varepsilon_F = 20$ m/d or 20cm/d?

Line 406: (Twarakavi et al., 2008) → Twarakavi et al. (2008)

Line 408: You should clear present the results of figures in the context, not just say
“**Figure 13b** presents the absolute head difference of the method developed here and
the HYDRUS package at the end of stress periods 3, 6, 9, and 12.”

Figure 14: sub-zones 1, 3, 5, 7, 9 or sub-zones 1, 5, 9, 13, 20?