

## ***Interactive comment on “An improved coupling model for water flow, sediment transport and bed evolution (CASFE v.1)” by S. He et al.***

**D. Lunt (Editor)**

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Dear authors,

As you can see, you have received two rather diverging reviews. As such, I made some informal enquiries, and would like to pass on the following:

“While the first reviewer makes a correct point (that the velocity must be zero at  $Z_b$ , also known as the no-slip boundary condition), this is not in contradiction with equation (7). This can be easily proven by setting  $u_1(Z_b)$  and  $v_1(Z_b)$  to zero and considering a “fixed bed” situation (in which case  $dZ_b/dt=0$  and  $E=D$ ). This will obviously lead to  $W_1(Z_b)=0$ . The kinematic condition presented in the paper can be found in different text books where the SWE are derived. See for example (Shock-capturing methods for

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free surface flows, by E. Toro, pages 20-23).”

As well as discussing this issue of zero velocity at or close to the bed, and addressing the other reviewer comments, please ensure that you carry out and discuss a more extensive model evaluation.

Yours, Dan Lunt

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Interactive comment on Geosci. Model Dev. Discuss., 7, 2429, 2014.

**GMDD**

7, C1335–C1336, 2014

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