

## ***Interactive comment on “Experimental study of fingered flow through initially dry sand” by F. Rezanezhad et al.***

**F. Rezanezhad et al.**

Received and published: 20 November 2006

### **The referee asked how the thickness of the cell would affect on the results?**

We performed some experiments with thickness 0.6 cm. The results for dynamics of water saturation were the same as presented in manuscript for thickness 0.3 cm. In our experiments, there are two main problems with increase the thickness:

1) With increasing thickness of the cell, the transmission of light reduces. Then we have to increase the exposure time in the camera setting and hence, the temporal resolution of our measurements will decrease. Since fingering is a very fast process, we need the rapid measurements with high temporal resolution in this method. This issue could be resolved by increasing the power of the light source proportional to the

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exponential of the cell thickness.

2) A more severe limitation is the increasing diffusion of the transmitted light due to multiple scattering. This can fundamentally only be undone to a rather limited degree with the deconvolution.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 3, 2595, 2006.

**HESSD**

3, S1516–S1517, 2006

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