Geophysical Research Abstracts, Vol. 7, 09084, 2005 SRef-ID: 1607-7962/gra/EGU05-A-09084 © European Geosciences Union 2005



## Self-potential tomographic approach to detect water movements in the vadose zone: laboratory experiments

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The aim of the research being presented, is to develop a geophysical technique able to translate into tomographic images water movements in the vadose zone by processing SP signals caused by electrokinetic effects (streaming potential effects). A large scale physical model has been built up in a tank at the Hydraulics Laboratory of the University of Basilicata (Potenza, Italy) in order to run infiltration and filtration experiments under controlled boundary conditions. The SP tomographies have shown a relevant capability in providing, from a probabilistic point of view, a tomographic image of water, while fingering the soil. The geophysical technique is then described together with the acquisition apparatus employed during the experiments and results discussed in the work.