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Channeling effect at the MADE transport experiment

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The MADE field transport experiment has been carried in a highly heterogeneous formation (logconductivity variance around 7). Various models have been used in the past in order to explain the observed highly skewed plume and the partial mass recovery. The latter feature has motivated the application of mass transfer models whose parameters were calibrated in order to fit measurements. We have recently applied a stochastic model of advective transport relying on measured formations and flow parameters only to predict the MADE plume. The agreement with observations was good except lack of mass recovery in the forward portion of the plume. We show that in this zone the model predicts a channeling effect along a few connective paths. By comparing the channels density and the sampling network we demonstrate that the poor mass recovery might have been caused by incomplete sampling rather than mass retention.