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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Representation of water abstraction from a karst conduit with numerical discrete-continuum models" *by* T. Reimann et al.

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We thank Yoar Cabeza for this comment. Subsequently, we want to clarify the intention and use of the FHLQ boundary condition.

Technically, the FHLQ boundary allows defining a user-defined inflow. This inflow can be zero and, therefore, resulting in the proposed Neumann type respectively no-flow boundary.

However, for some pumping scenarios, when conduit heads in the catchment drop and spring discharge disappears, inflow from catchment boundaries can occur (e.g. surface water infiltration in the vicinity of the spring). This is the case for the situation used for our application outlook (compare Maréchal et al., 2008). Here, a constant inflow of

30 liters per seconds from the river during the pumping period is determined by direct measurements and chemical analysis (Maréchal et al., 2008). The FHLQ boundary condition allows replicating these field observations.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 4463, 2013.