

Interactive comment on “Spatial and temporal distribution of drainage and solute leaching in heterogeneous urban vegetation environments” by H. Nouri et al.

Anonymous Referee #1

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The manuscript entitled as “Spatial and temporal distribution of drainage and solute leaching in heterogeneous urban vegetation environments” by Nouri et al. aims to investigate deep percolation of recycled waste water used for irrigation in an urban area. While the topic is certainly of interest for the audience of HESS, the manuscript cannot deliver what it promises in the title. That being said, I believe that the experimental design does not provide the foundation to conclude on any spatial and temporal distribution of drainage. The experiment is based on one replicate for two sites each and measurements were taken once a month for a period of 12 months. Moreover, “the amount of collected leachate was too small to allow an

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accurate nutrient analysis” (p. 6705, lines 7-8), and “investigations of the temporal variation of all water quality parameters [] was not possible []” (p. 6705, lines 10-11), which makes a lot of statements speculative. Apart from the fundamentally flawed experimental design, the manuscript does neither provide any detailed description of statistical analyses nor discuss the findings critically. I regret to say that at the current stage, the manuscript is not publishable unless major revisions are done. For example, the hypotheses that “heterogeneity of vegetation or/and soil characteristics [is mainly related to differences in lysimeter performance]” (p. 6703, lines 2-3) and “variation in landscape plants [] led to differences in evapotranspiration, canopy interception rates and root distribution” (p. 6703, lines 3-5) could be tested by using established models (e.g., Hydrus-1D for water flow and solute transport) in combination with the observed data. More specific comments are provided in the attachment.

Please also note the supplement to this comment:

<http://www.hydrol-earth-syst-sci-discuss.net/10/C3194/2013/hessd-10-C3194-2013-supplement.pdf>

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