



Development and Analysis of a Global Database for Soil Infiltration

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In this paper we present for the first time a global database of infiltration curves and related soil and land properties. In total, 4936 infiltration curves were collected covering all continents, whereby these data were either provided and quality checked by the scientists who performed the experiments or they were digitized from published articles. In total, data from 54 different countries were included in the database with the majority of the data sets from different locations stemming from Iran (37), China (23), and USA (15). The collected infiltration curves cover a time span from 1976 up to today. In addition to the infiltration data, basic characteristics of the locations, soils, and management were collected, which makes the database valuable for further development of pedo-transfer functions for estimating soil hydraulic properties such as saturated hydraulic conductivity and sorptivity. Textural information (clay, silt, and sand content) is available for 3761 out of 4936 examined soils covering nearly all 12 soil USDA textural classes. Information on the land use is available for 76 % of experimental sites with agricultural land use as the dominant type. We are convinced that the proposed database will allow for a better parameterization of the infiltration process in land surface models and for testing infiltration models. All collected data and related soil characteristics will be online in an Excel file for future use. In order to disclaim the future probable mistakes or problems with database, we confirm that the database is for use by public domain and will be used and copied freely. Although, an intensive attempt has been made to collect and prepare the database, no warranty can be given that the database will be free of any mistakes as well as for the validity and usefulness of data. A quality assessment of data is strongly advised prior to any use of database. Any suggestion for improvement of database and any new data for inclusion into database are welcomed