R Vadose Package: estimation of soil water characteristics

The vadose package can derive soil water retention and hydraulic conductivity curves using models from the Offin Estimation of Soil Transfer parameters (OFEST) and Beerkan Estimation of Soil Transfer parameters (BEST).

Specifically, the package can perform the following function: - Soil water characteristics - Many infiltration functions in the package and they include Green and Ampt,Philip, SCS (US-Soil Conservation Service), Kostiakov, Horton,Swartzendruber,Modified Kostiakov, Revised Modified Kostiakov, brutsaert and valiantzas. -There are 15 particle size distribution functions in the package and they include logistic models, van Genuchten models, Fredlund models, a logarithmic model, Andersson models, and Gompterz. van Genuchten water retention and unsaturated hydraulic conductivity model with internal saturated hydraulic conductivity functions are also implemented. - There are also 12 goodness of fittests and they include AIC, BIC, R-square, RMSE, NRMSE, etc.

You can install: latest development version from github with if (packageVersion("devtools") < 1.6) { install.packages("devtools") } if(!require("nlmrt")){ install.packages("nlmrt") }

devtools::install_github("gowusu/vadose")

Author: George Owusu owusugeorge@ug.edu.gh This is part of the author's PhD program.