Code package for AJAE Supplementary Online Appendix for Optimal Groundwater Extraction under Uncertainty and a Spatial Stock Externality

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A GitHub repository version of the code can be found at:

<https://github.com/Nateme16/SDP-Groundwater>

This file package was used to make the results of the paper listed above. It contains the following files and folders:

AJAErun.m - the primary program file

AJAErun\_tab.m - for creating Table 4 in the paper

conevolume.m – calculates the volume of water given the cone parameters

conevolume2.m - returns the surface area of a cone of a given volume and height

eom2.m - the equation of motion for groundwater height

irrig.m - translates groundwater height to remaining irrigated acres

raintime.m – calculates rainfall probabilities based on MC process

profit and crop yields – folder containing profit and crop yield functions

randp – file package for creating MC rainfall time series from discrete rainfall levels

value function iteration – file package for solving the various rainfall scenarios using stochastic dynamic programming and value function iteration.