

HW#2**Assignment:** September 9, 2009**Due:** September 15, 2009

Solve the 1D Buckley Leverett problem for 10 days with a time step $\Delta t = 0.1 \text{ day}$, using the explicit upstream formulation. Use the data specified in class.

$$\frac{f_{wi}^n - f_{w,i-1}^n}{\Delta x_{i-1/2}} = \frac{S_{w,i}^{n+1} - S_{w,i}^n}{\Delta t}$$

Plot the results every 5 time steps on the same figure, using S_w from 0 to 1 and x from 0 to 100. Make sure the length of the x-axis is about the same as the y-axis when printed.

Provide a table of the S_w versus grid cell at 10 days.

As is required for every assignment in this class, include a short summary of how you solved the problem.