

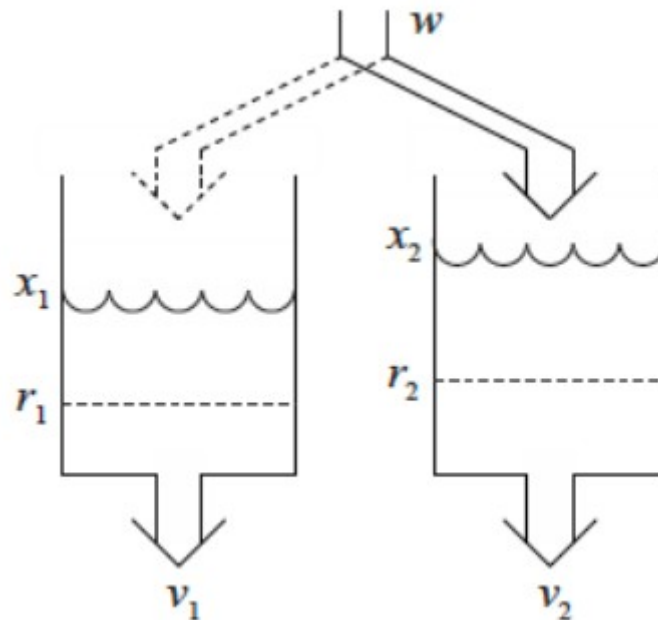
# Homework 3

## Simulation Engineering

Mateusz Turzyniecki

547299

### Simulation of water tanks in Ptolemy II



Schematic representation of water tanks

Input parameters:

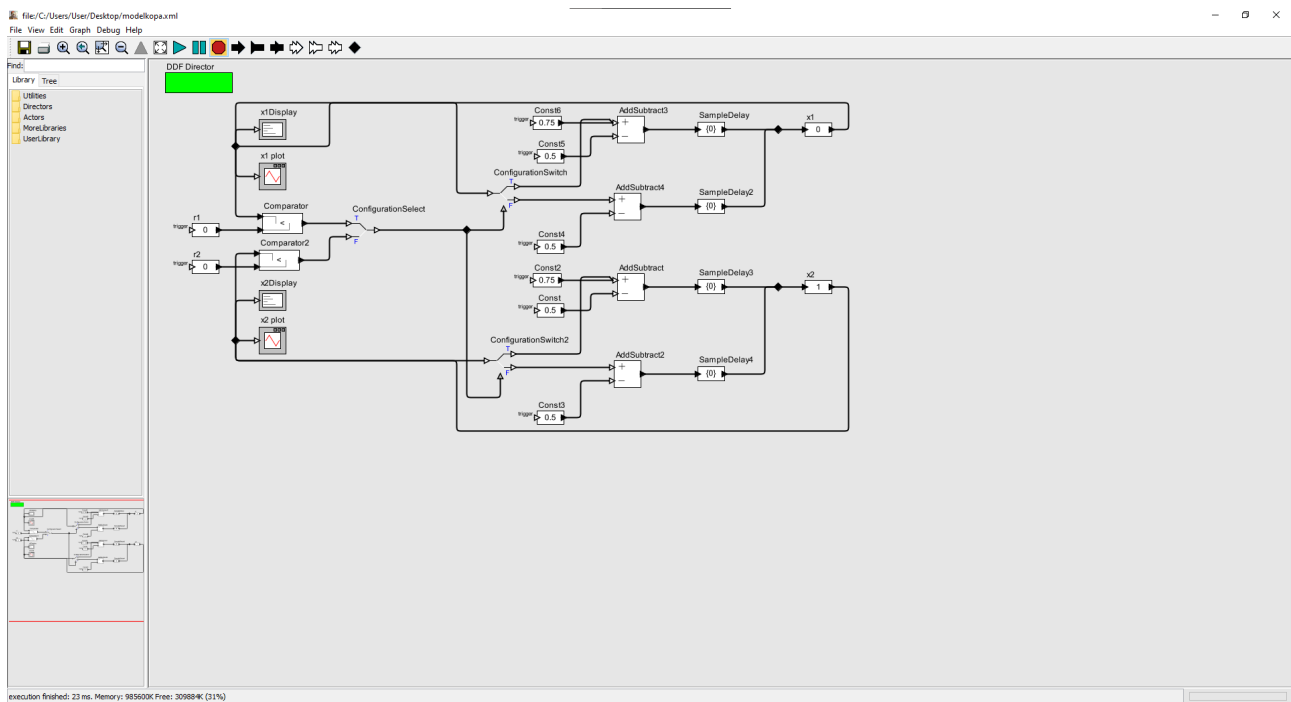
$$r_1 = r_2 = 0$$

$$v_1 = v_2 = 0,5$$

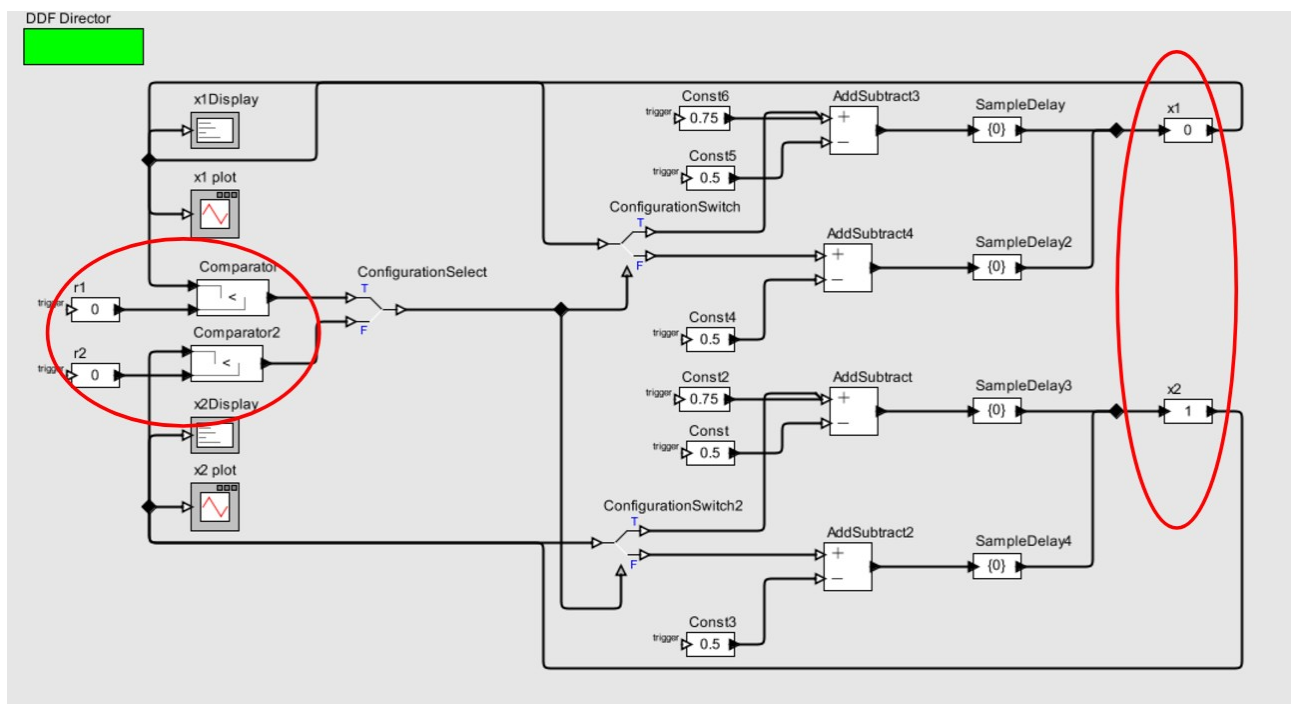
$$w = 0,75$$

$$x_1 = 0$$

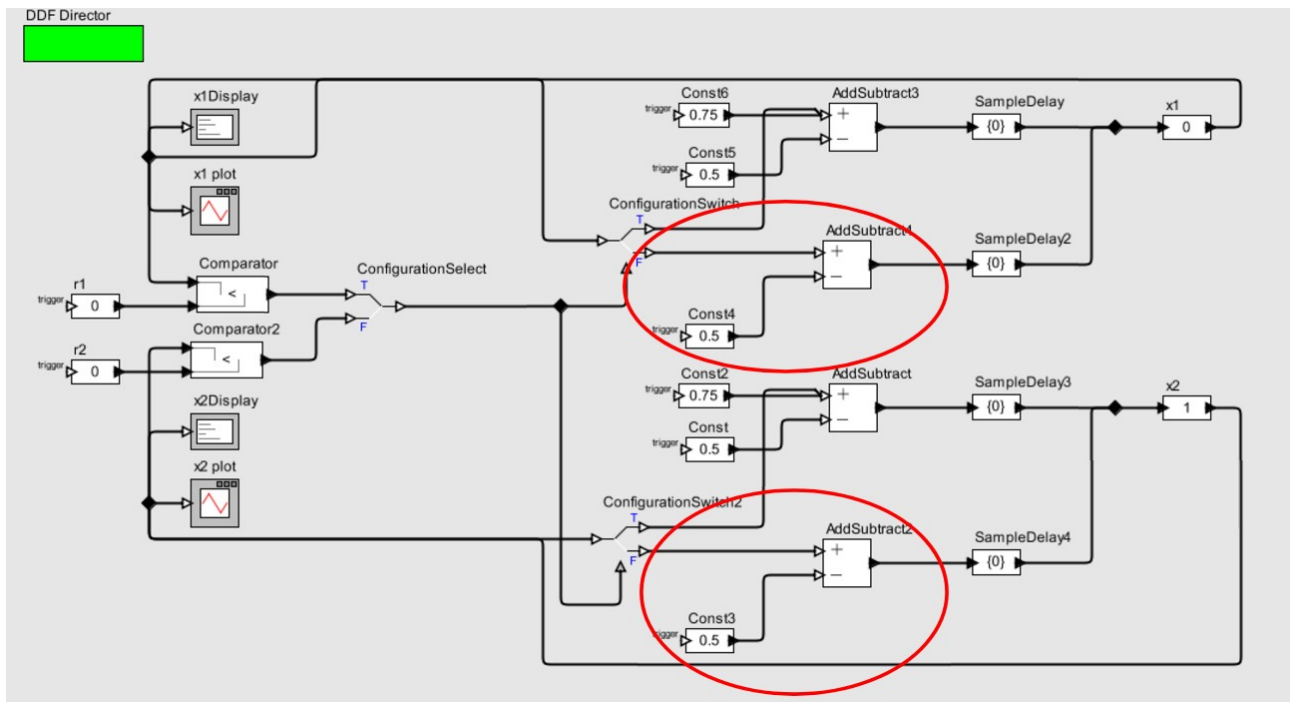
$$x_2 = 1$$



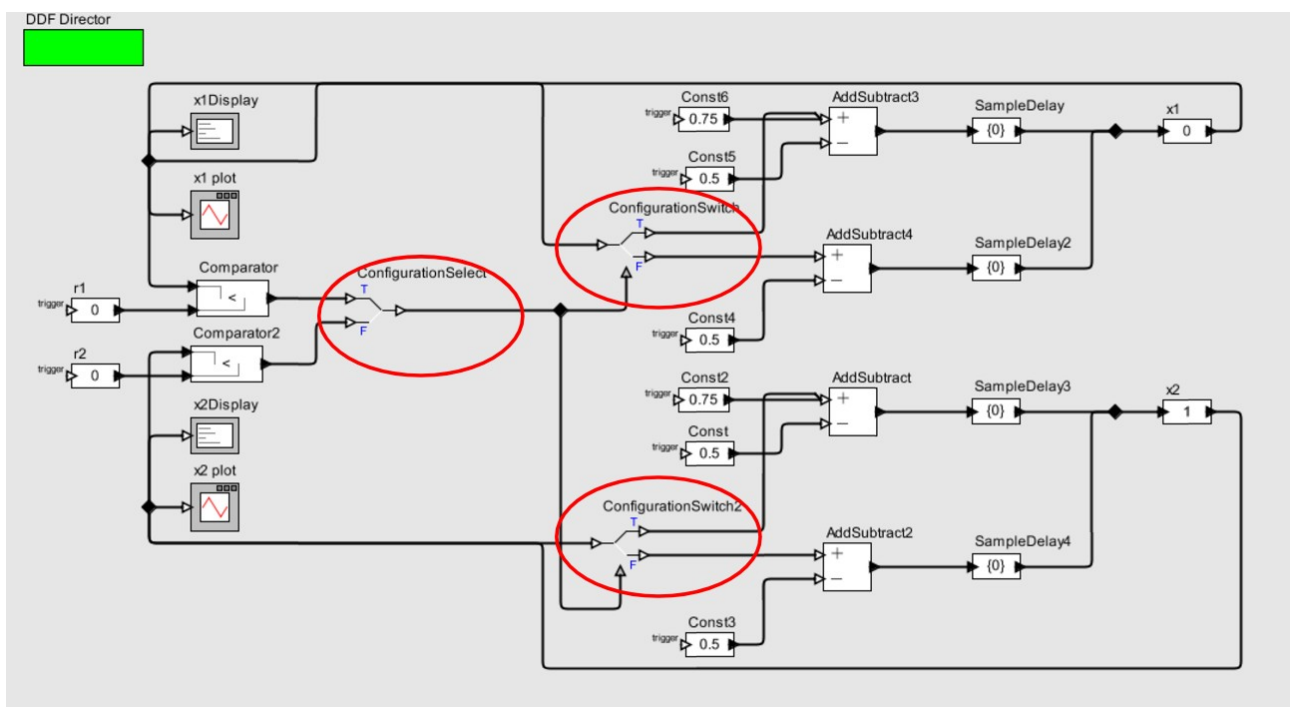
Simulation schematic



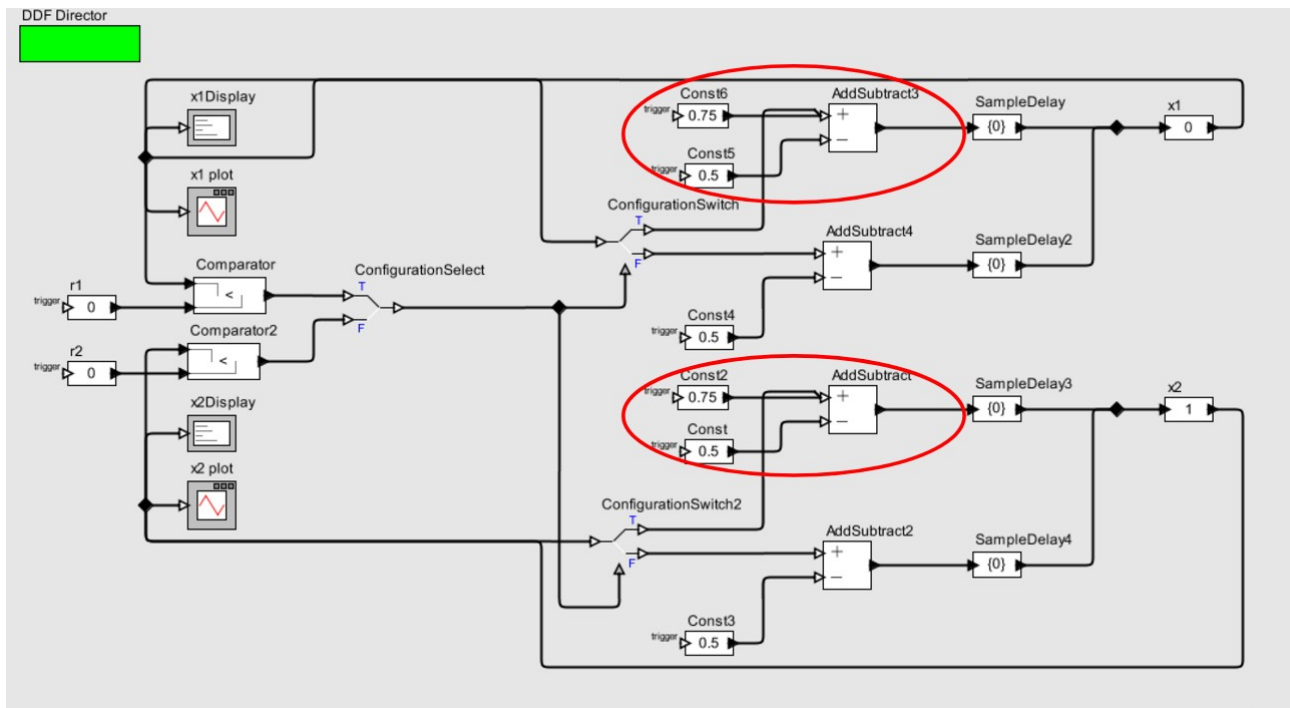
$x_1$  and  $x_2$  variables are being compared with  $r_1$  and  $r_2$  constants.



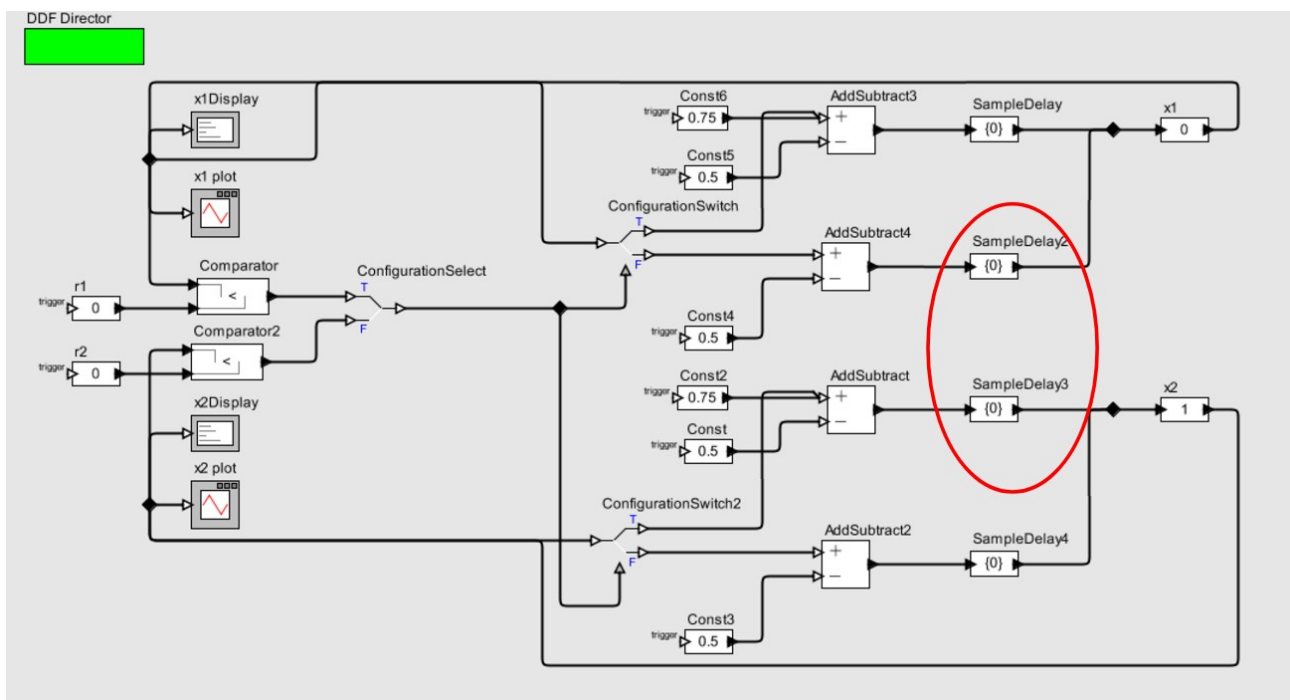
By default both of them lose water at a constant rate of 0,5.



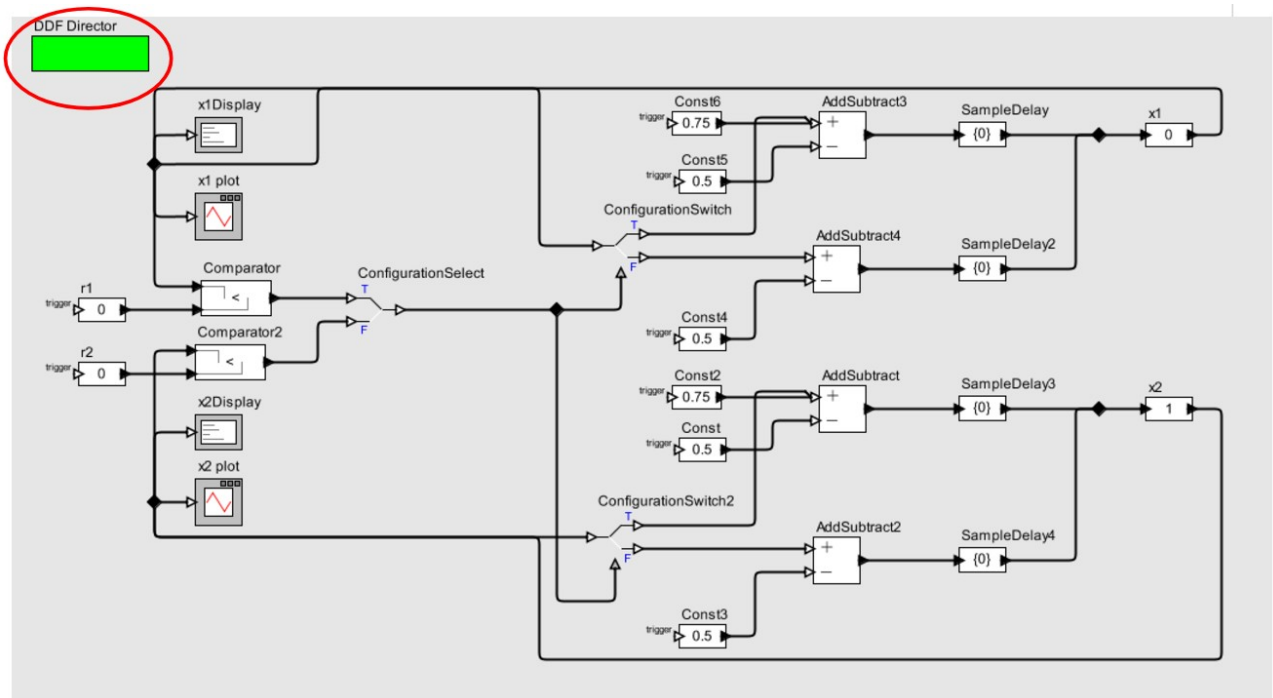
If one of them falls below zero water gets added to the tank.



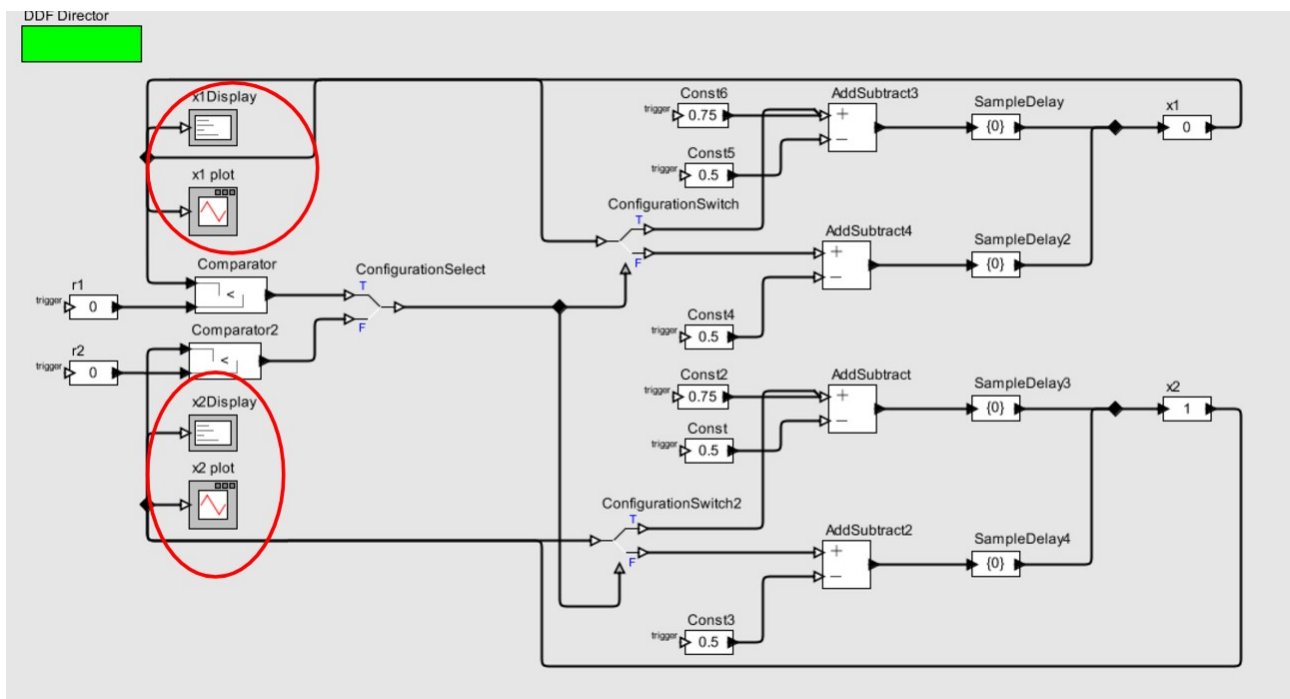
Water is added at a rate of 0,75, but still is lost at a rate 0,5.



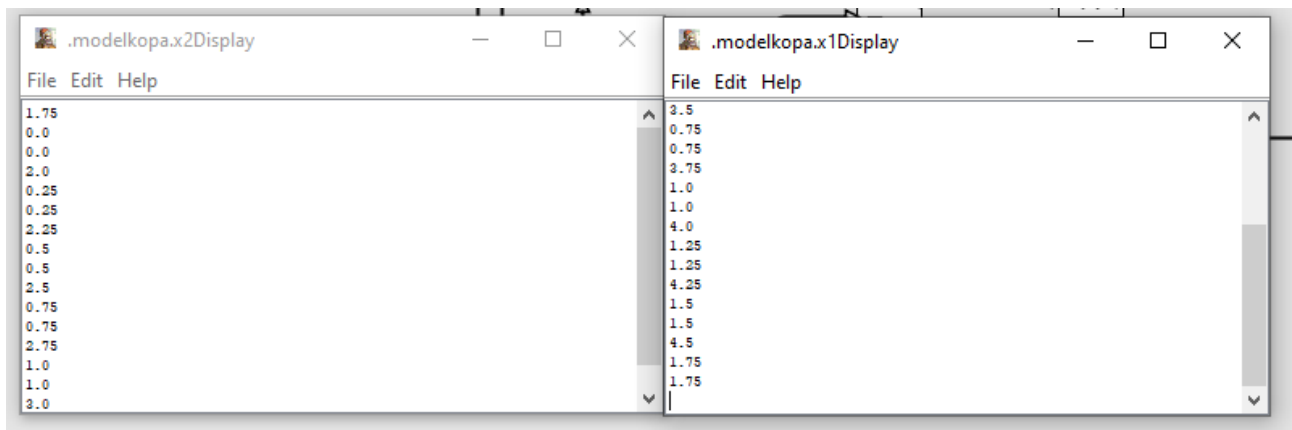
Sample delays are used to loop the simulation.



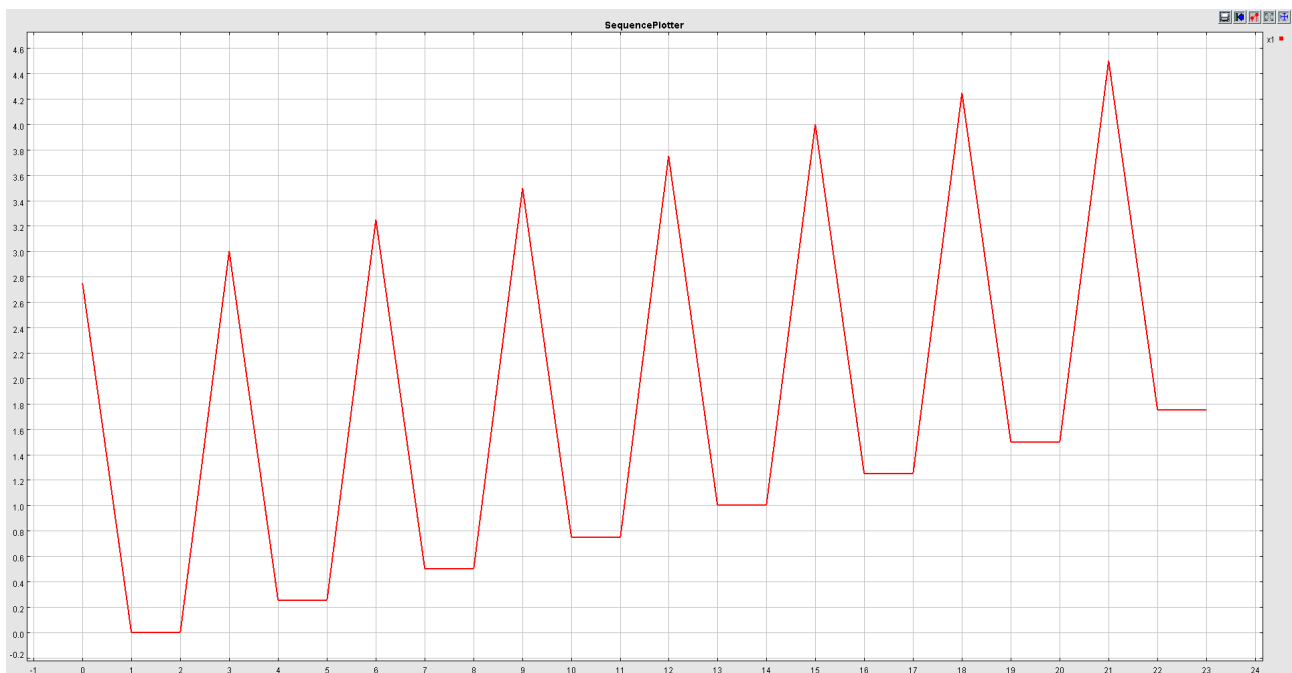
DDF Director is used to manage the time of simulation



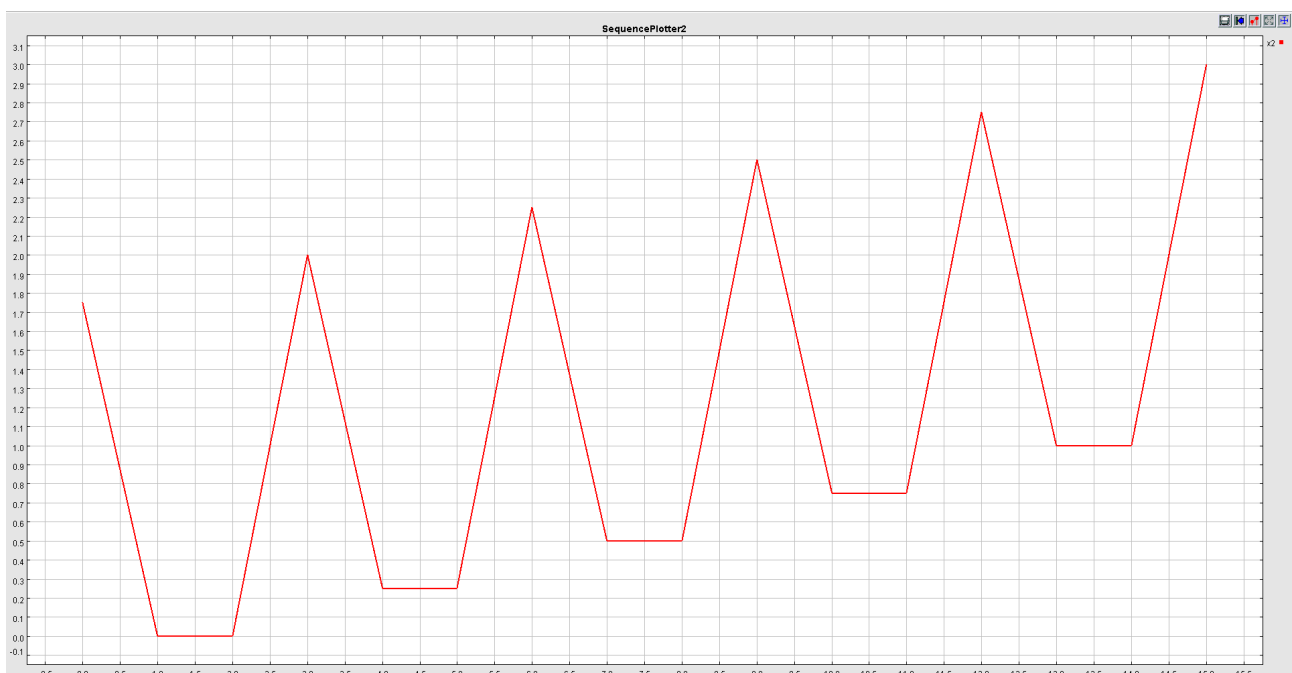
Displays and plots show the results of simulation



$x_1$  and  $x_2$  displays



Plot of  $x_1$



Plot of  $x_2$