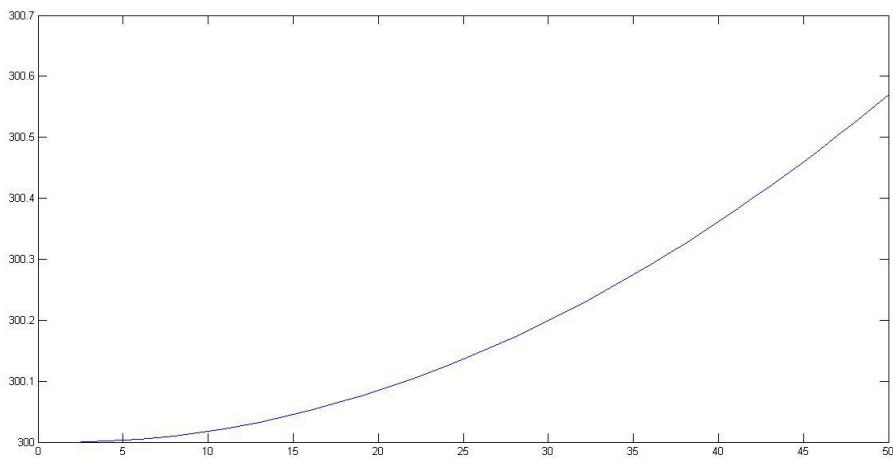
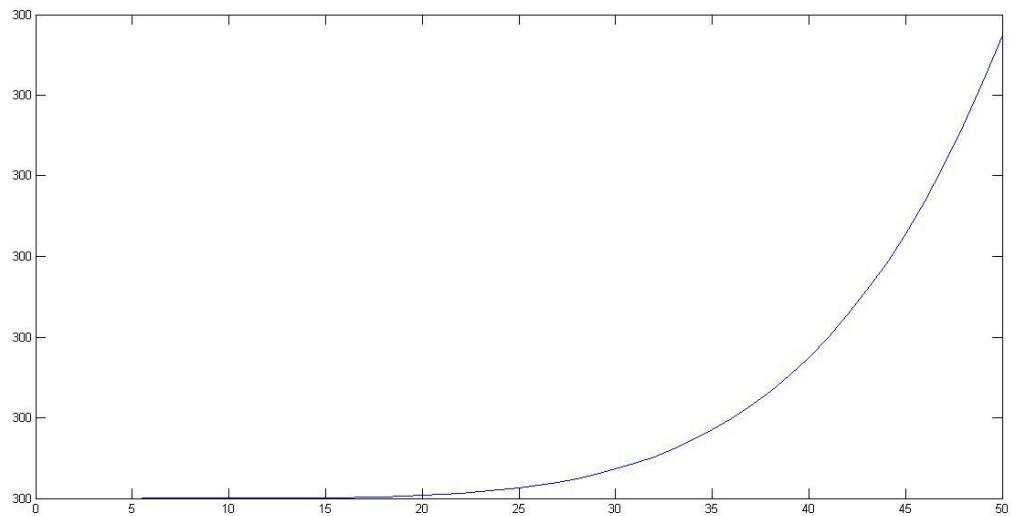
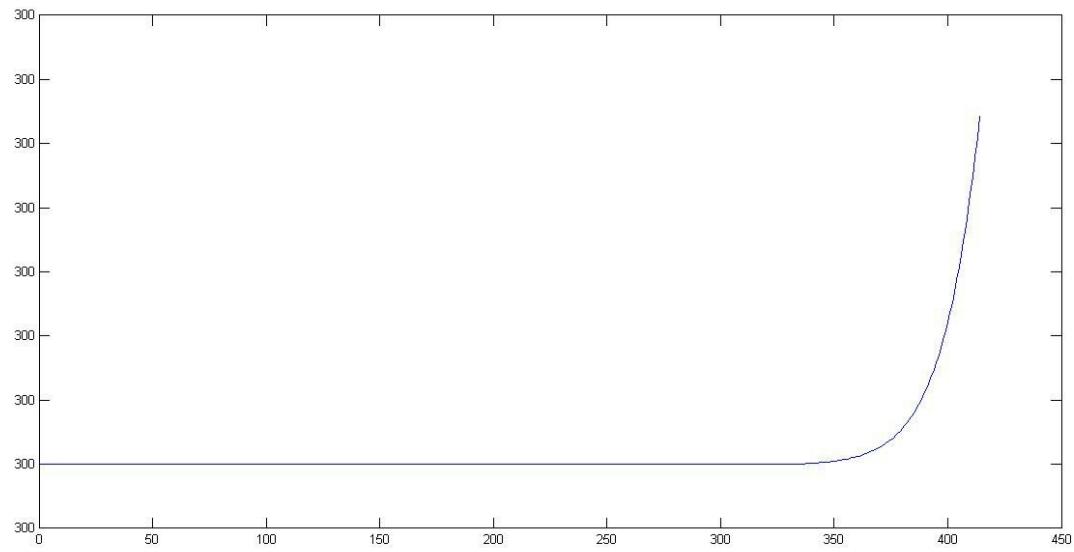
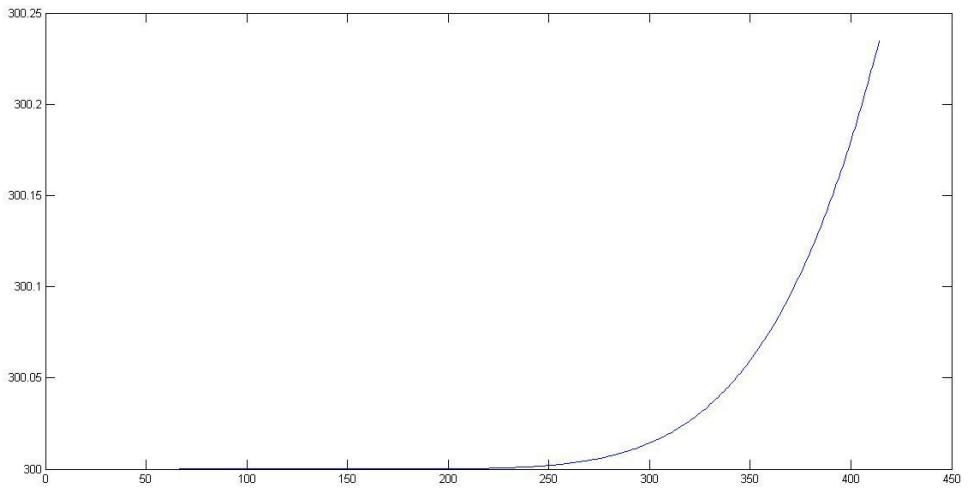


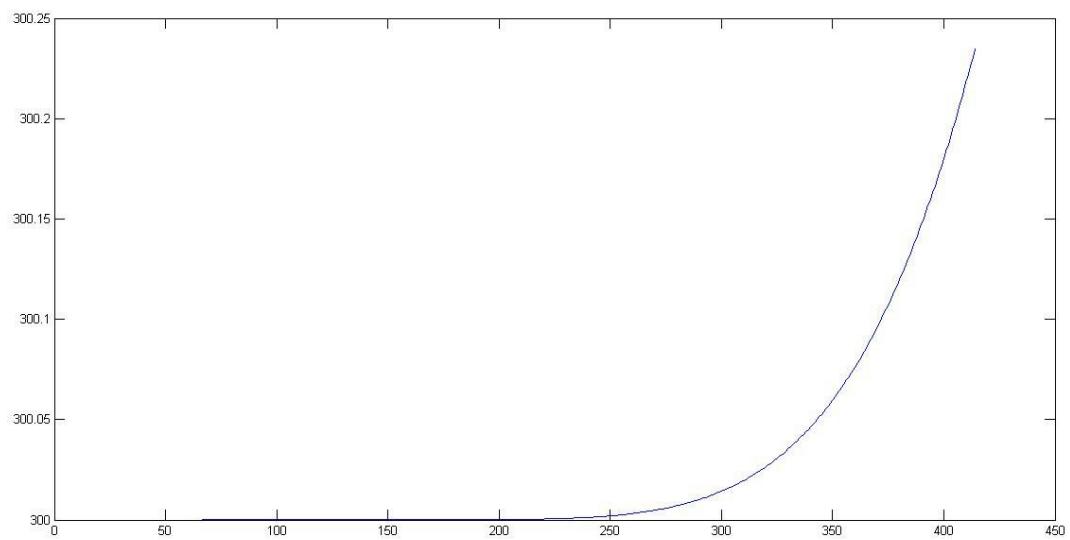
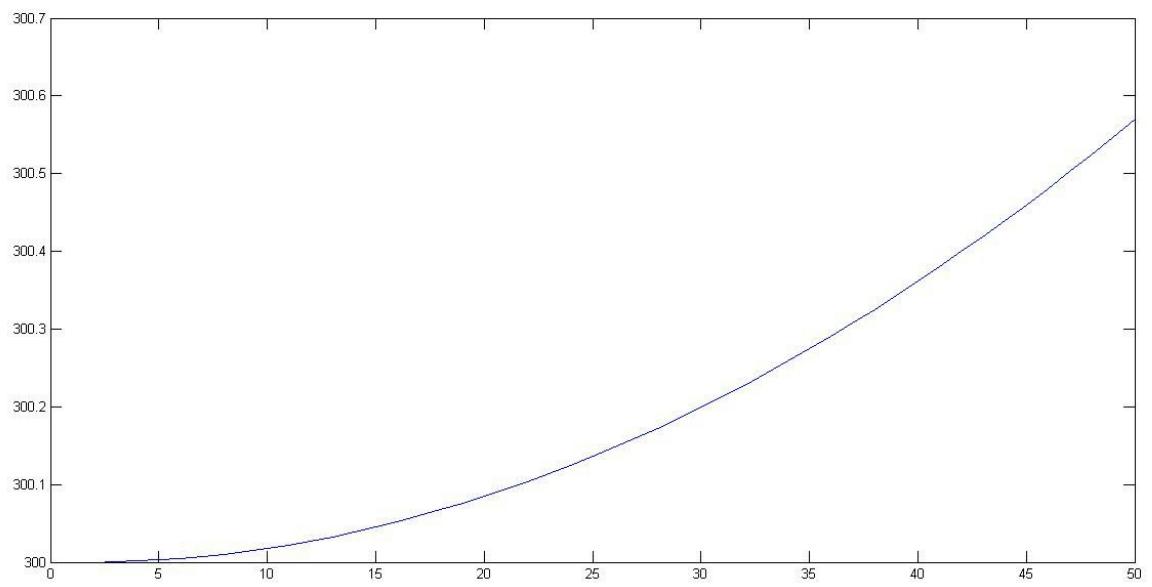
# ASSIGNMENT - 9

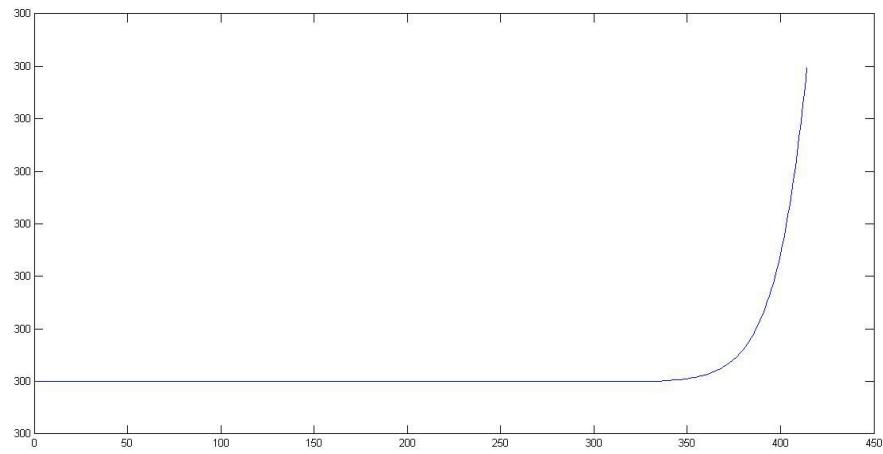
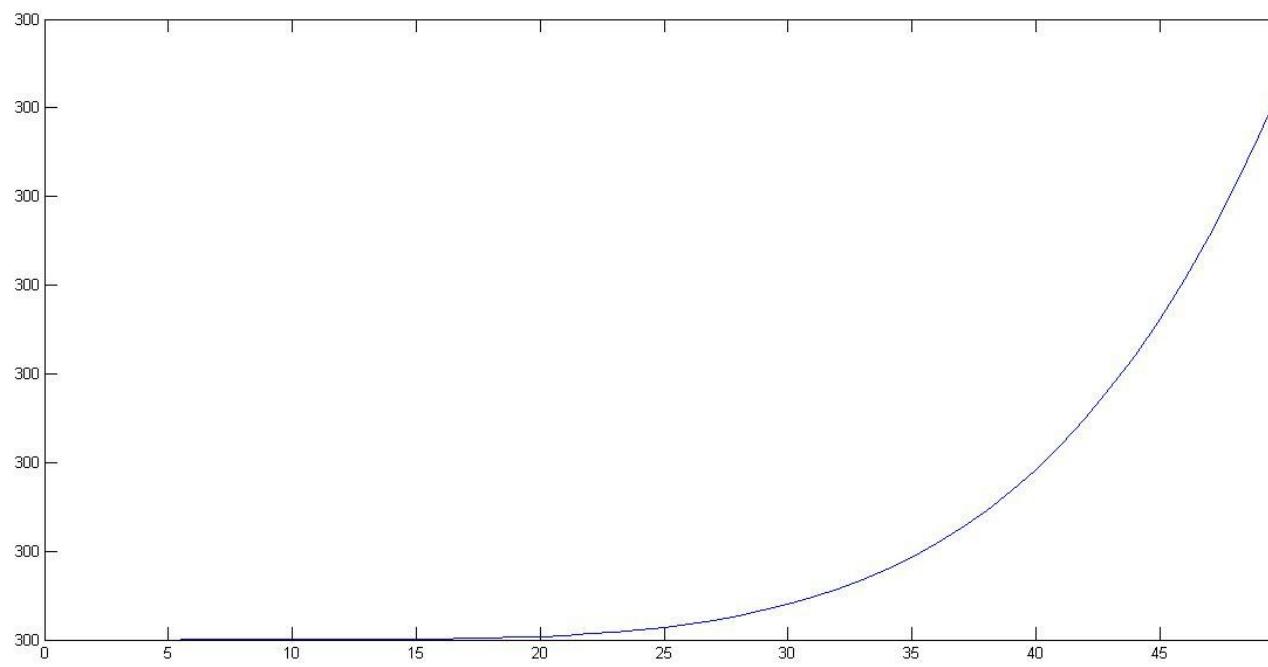
The graphs for each method have been shown below.

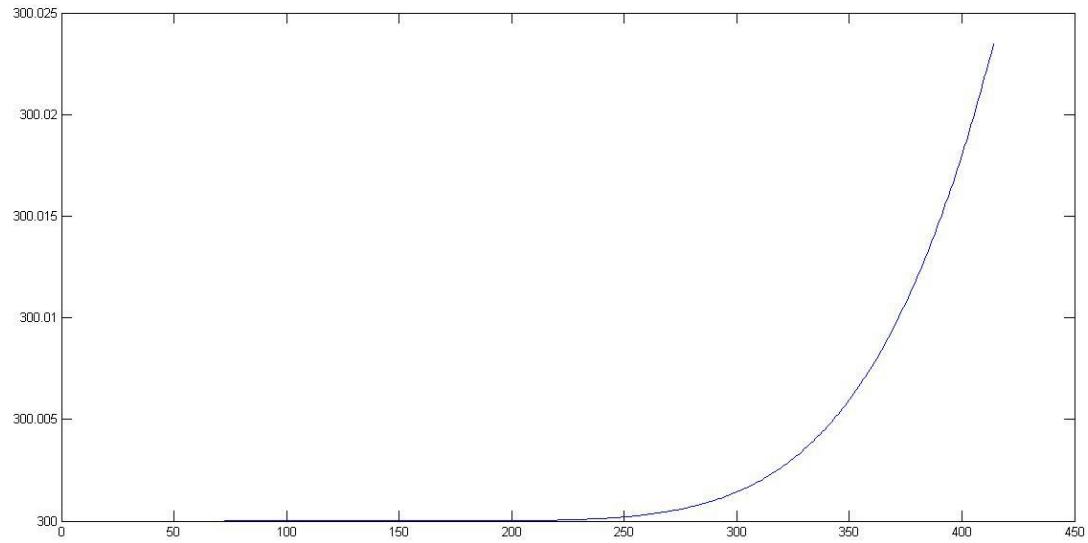
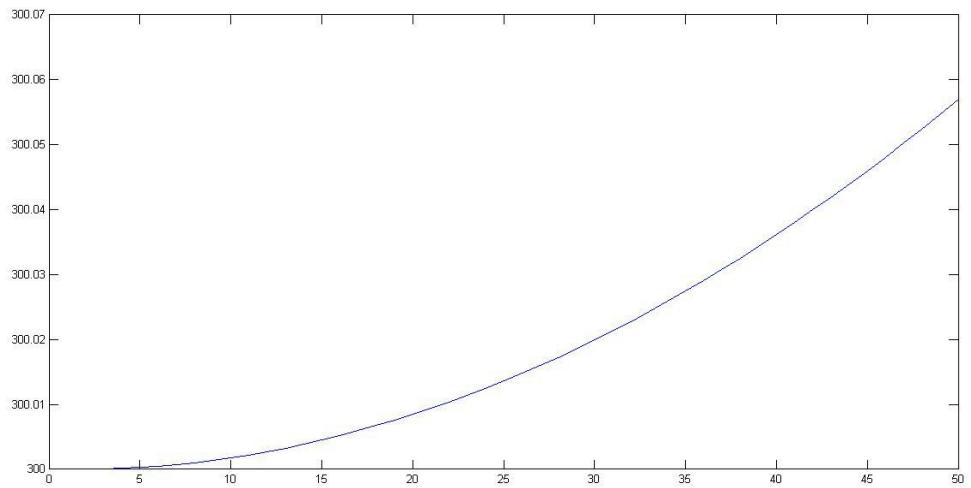
I.) FTCS

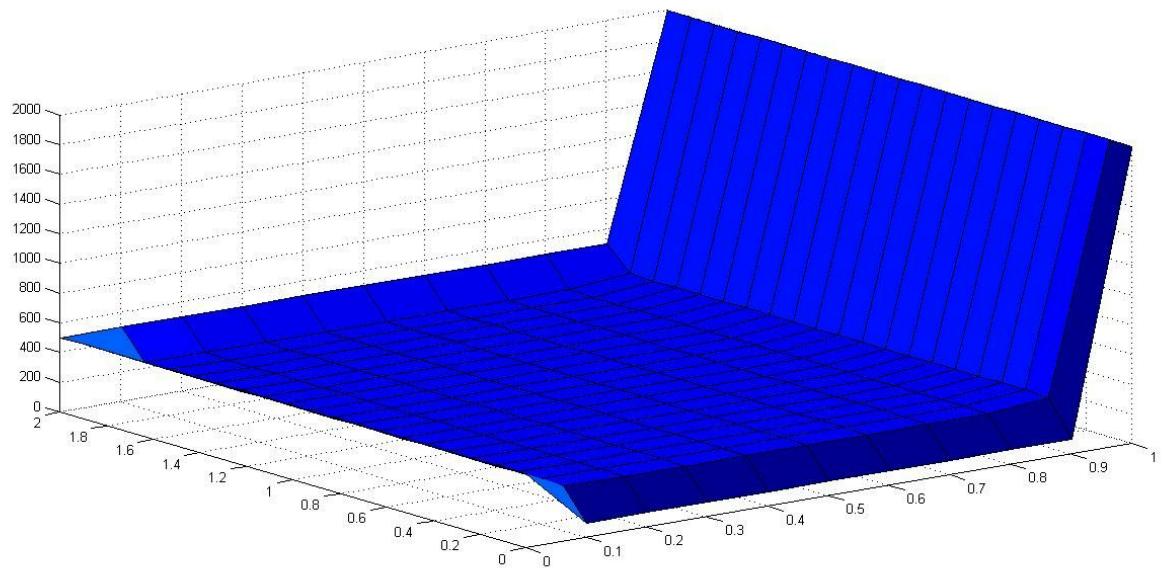
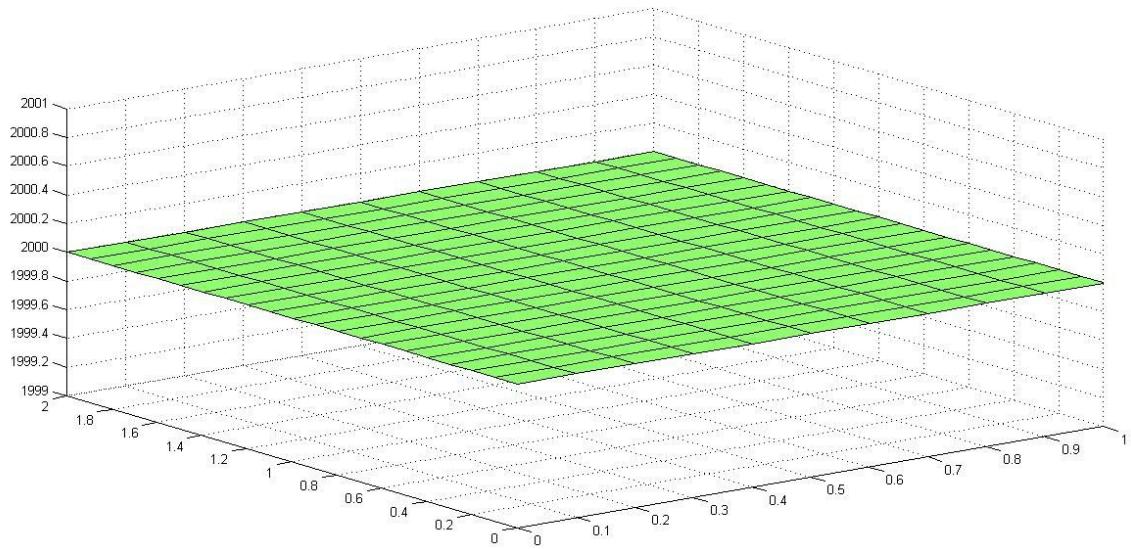


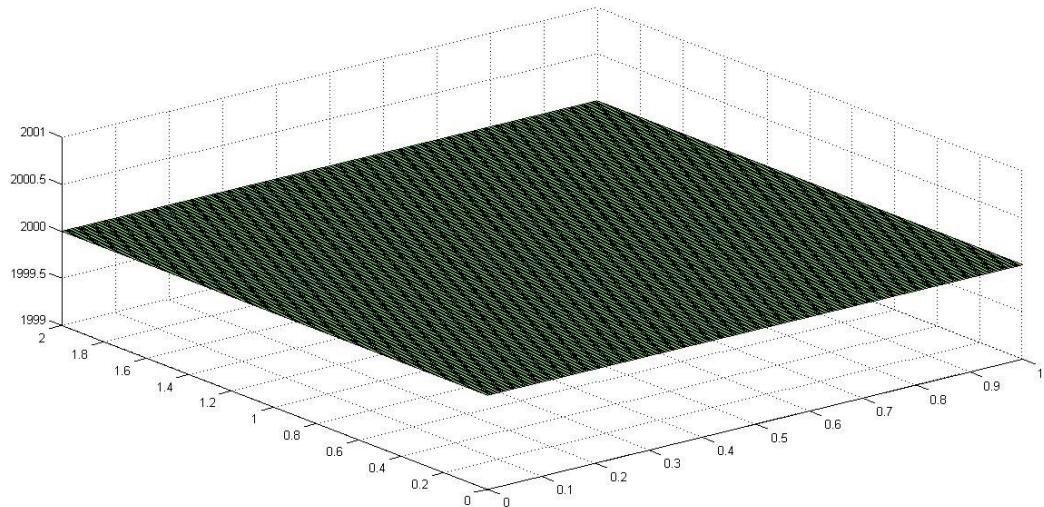
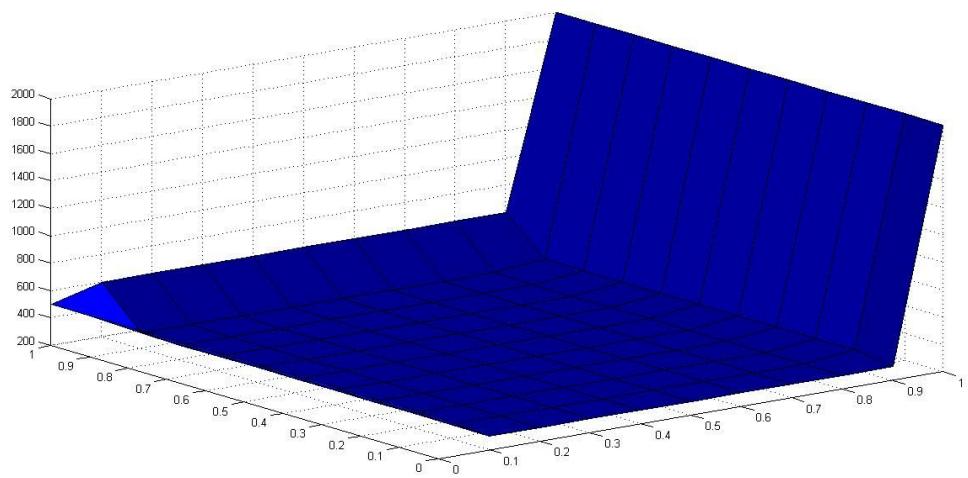


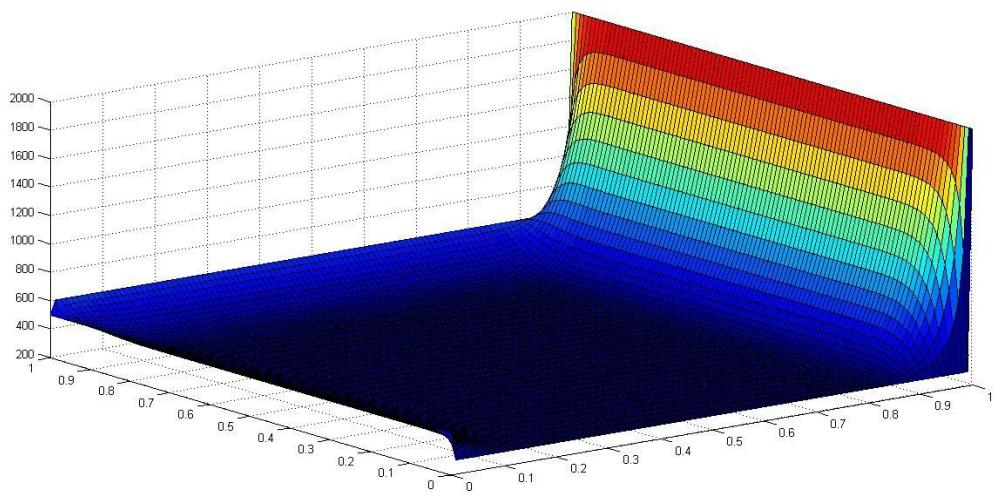
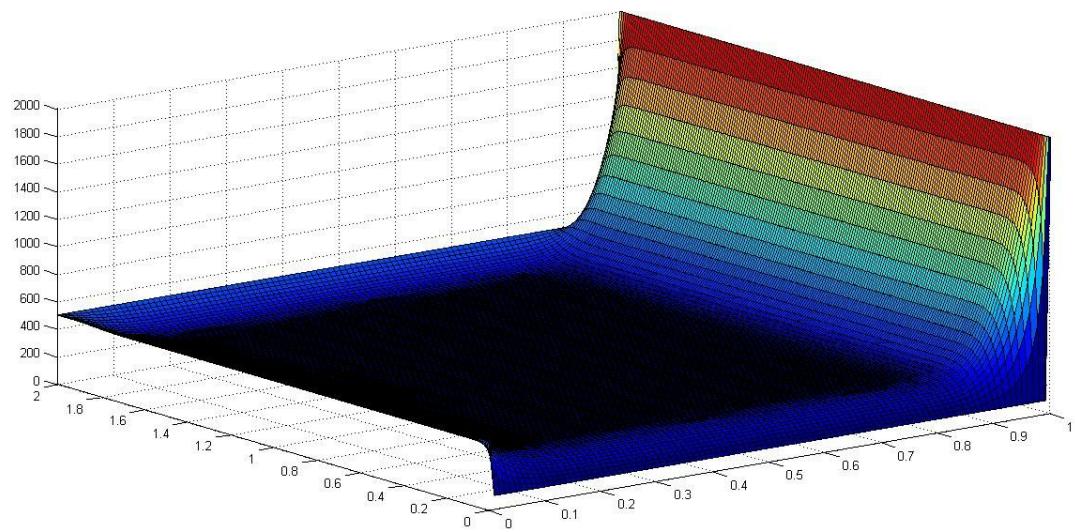




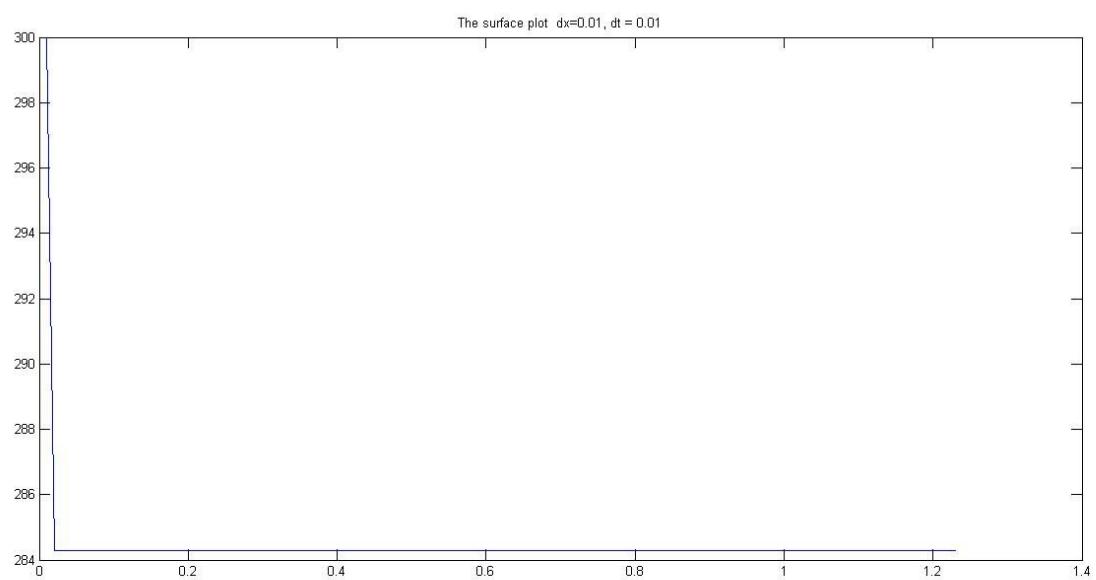
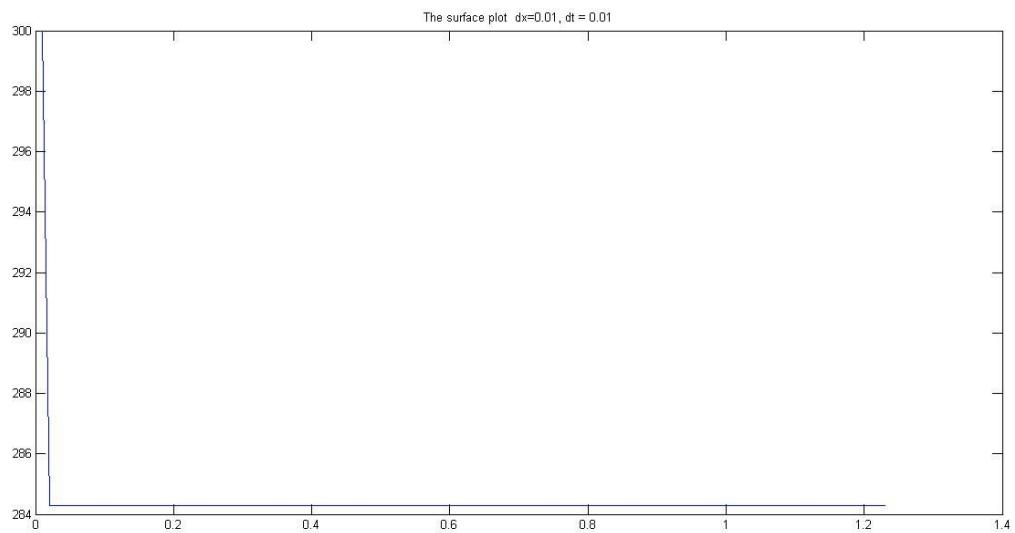


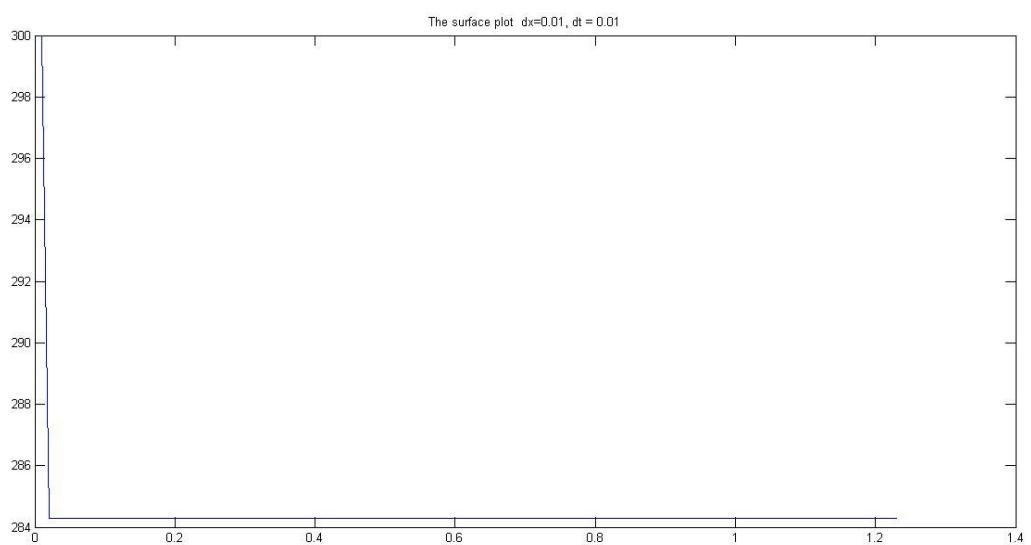
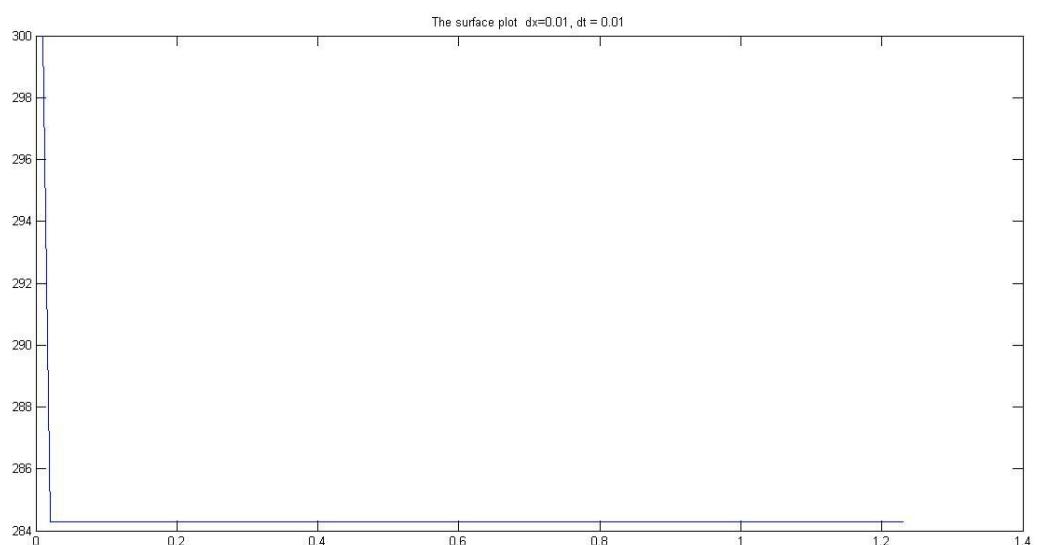


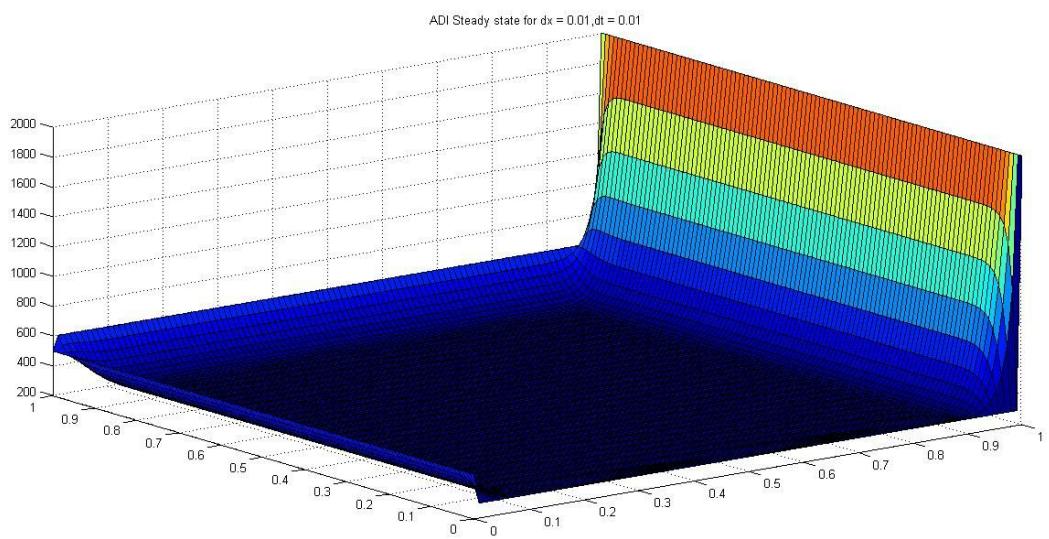
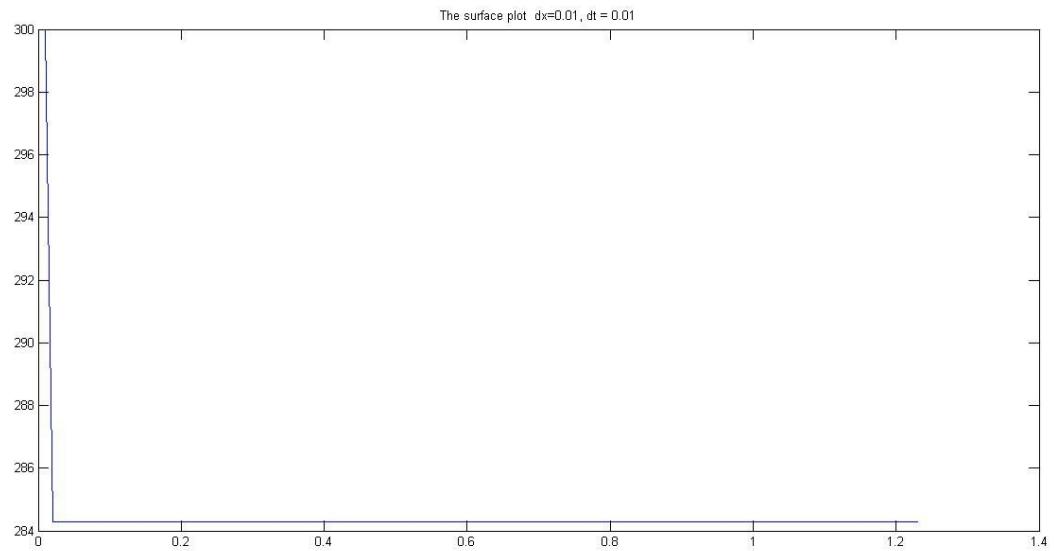


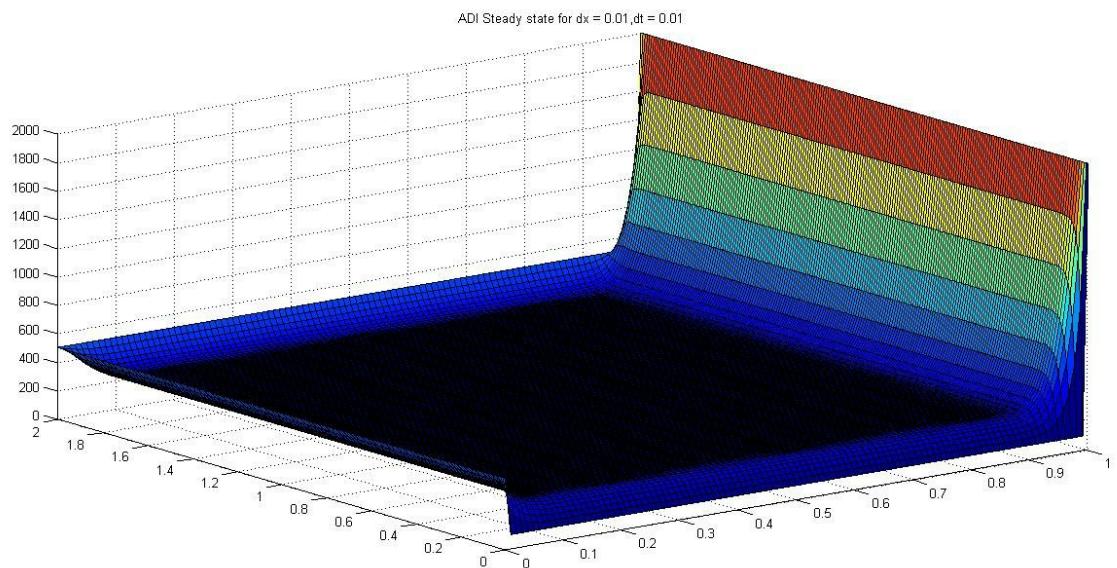
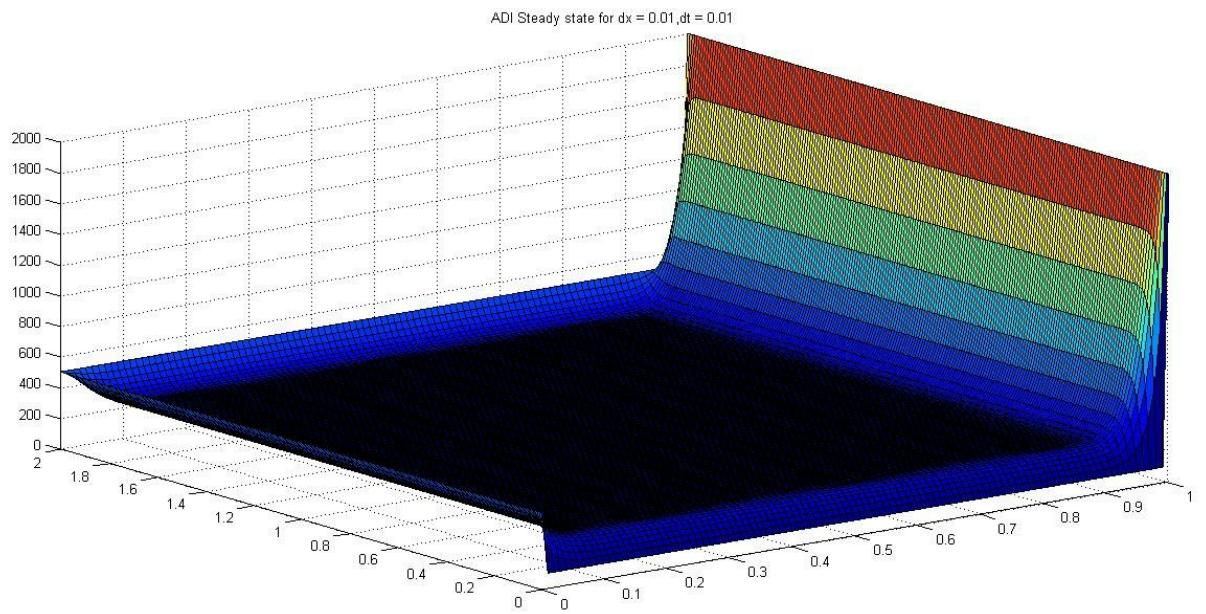


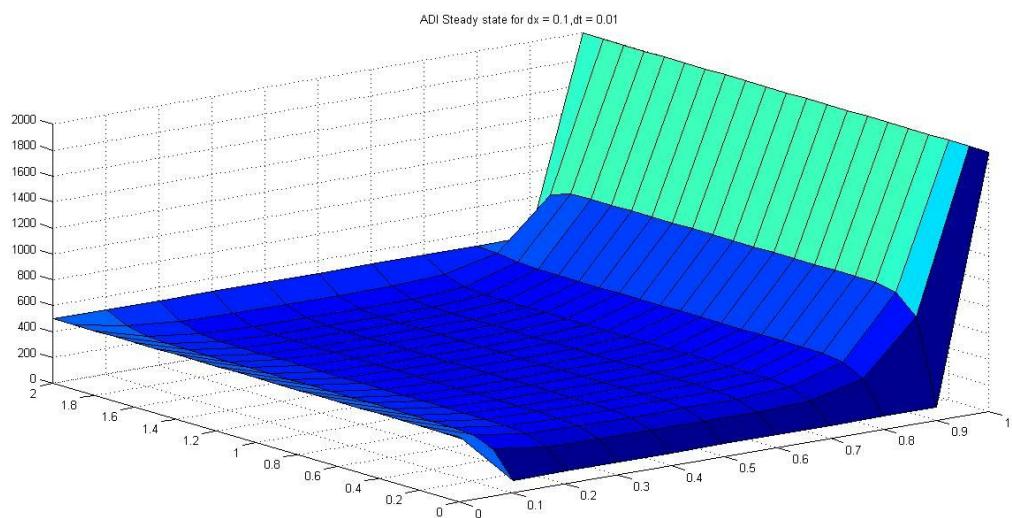
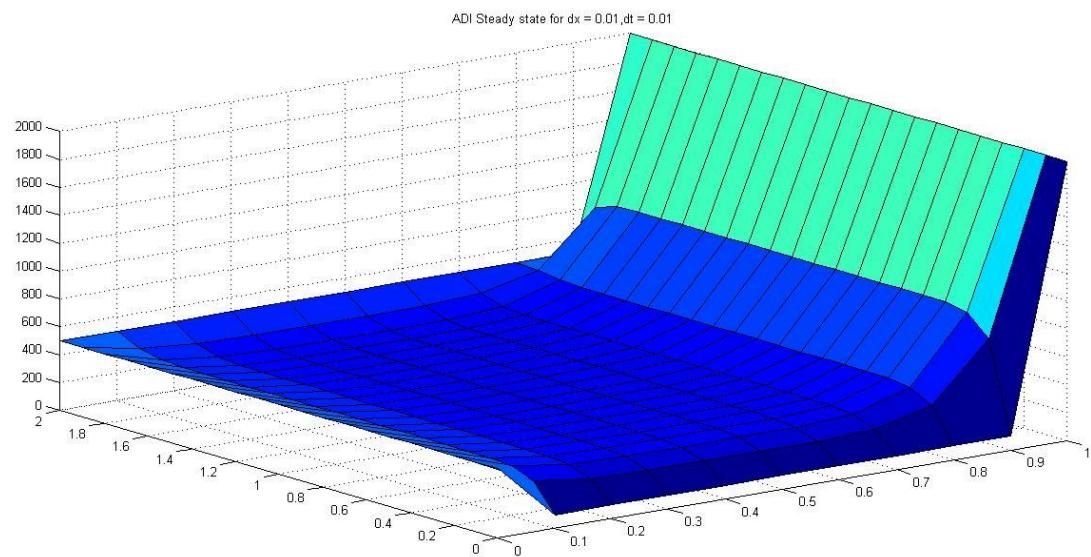
## II.)ADI

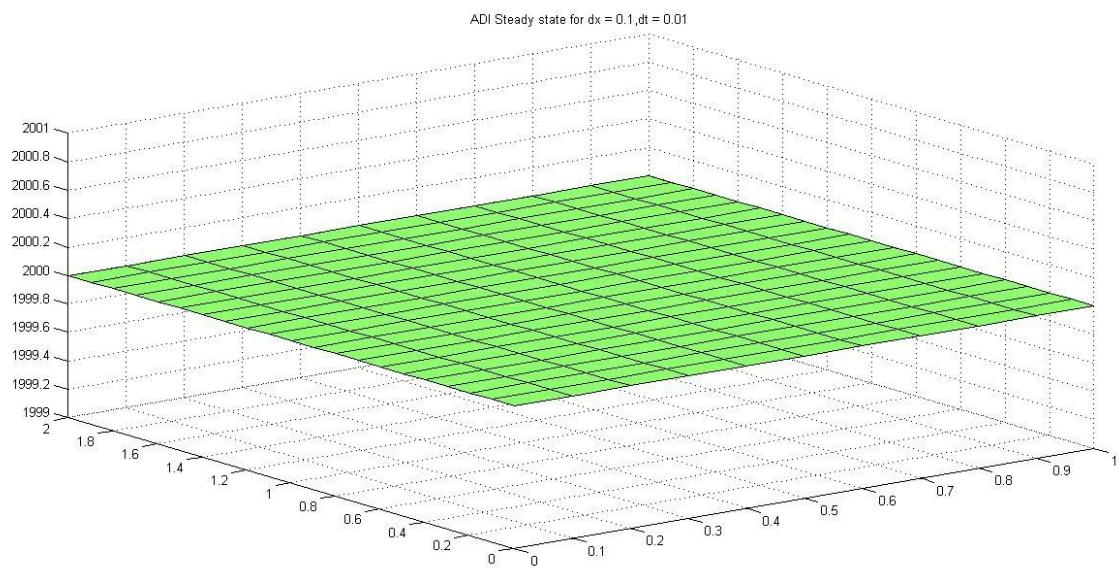
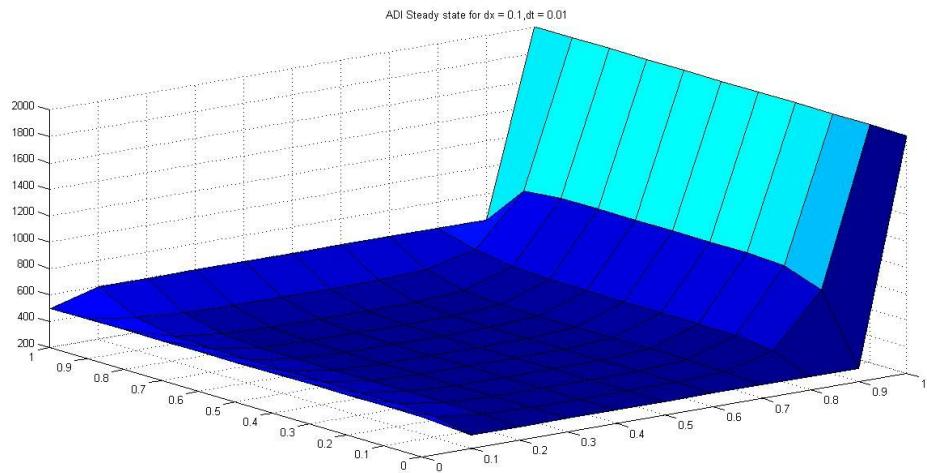


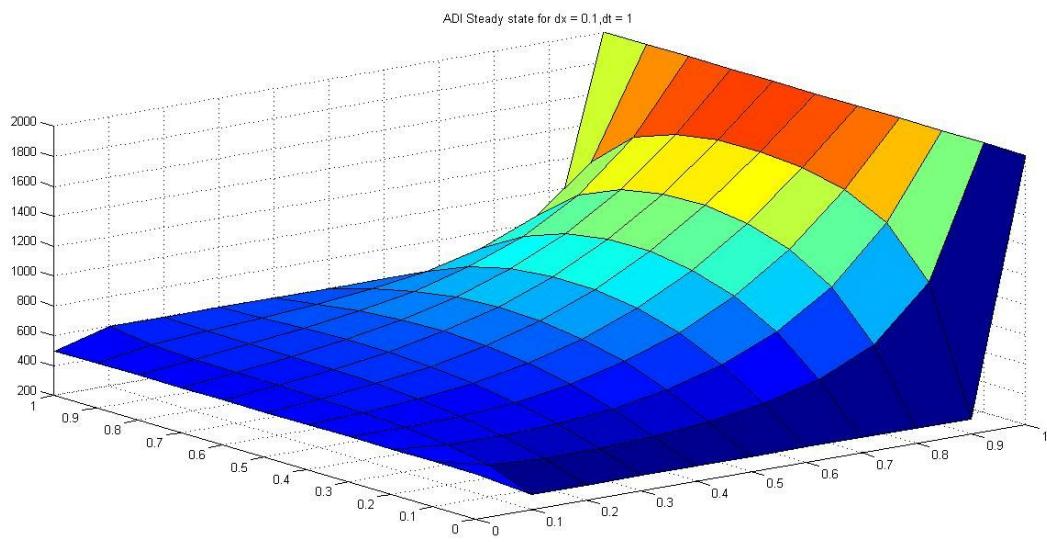


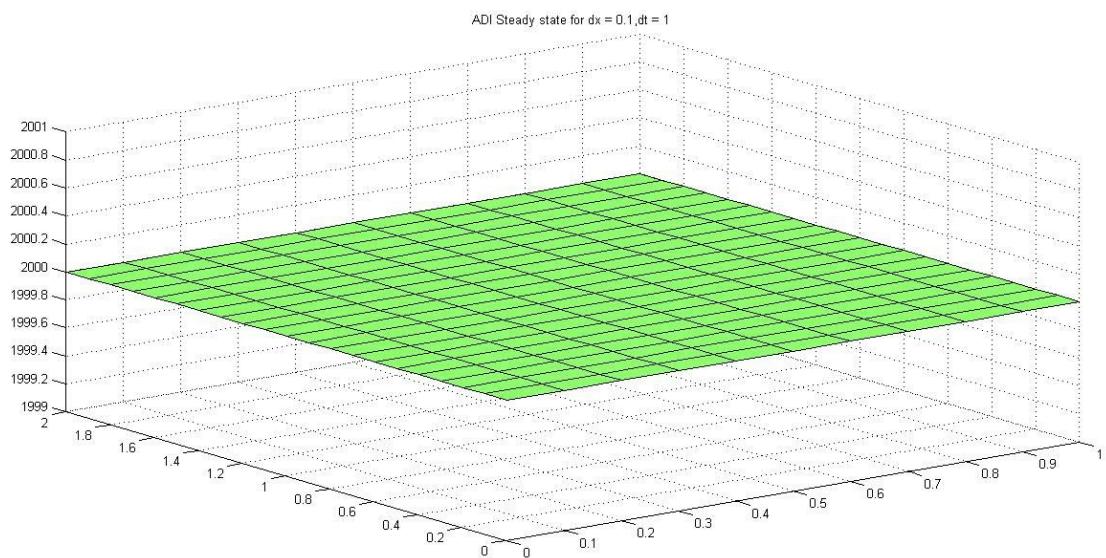
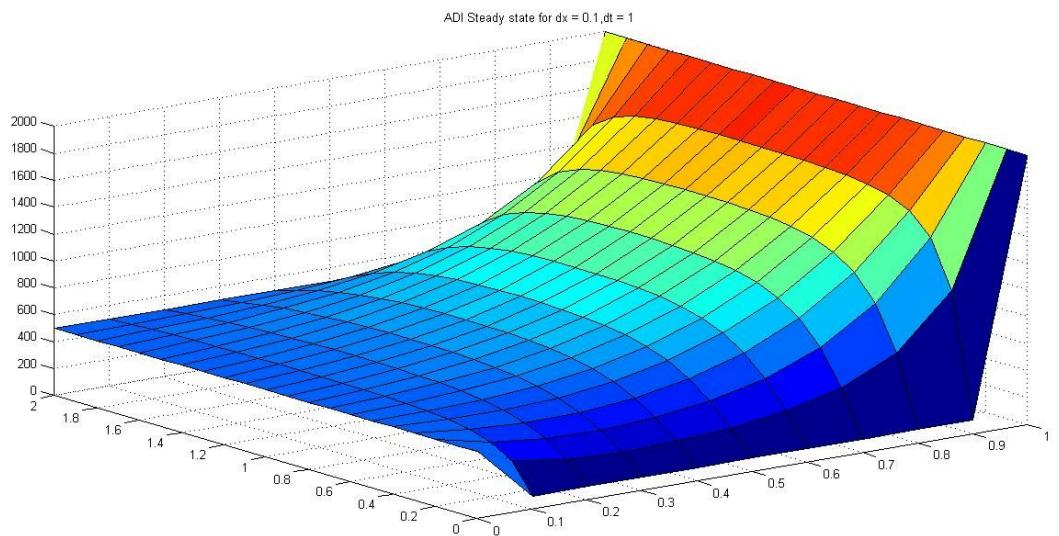




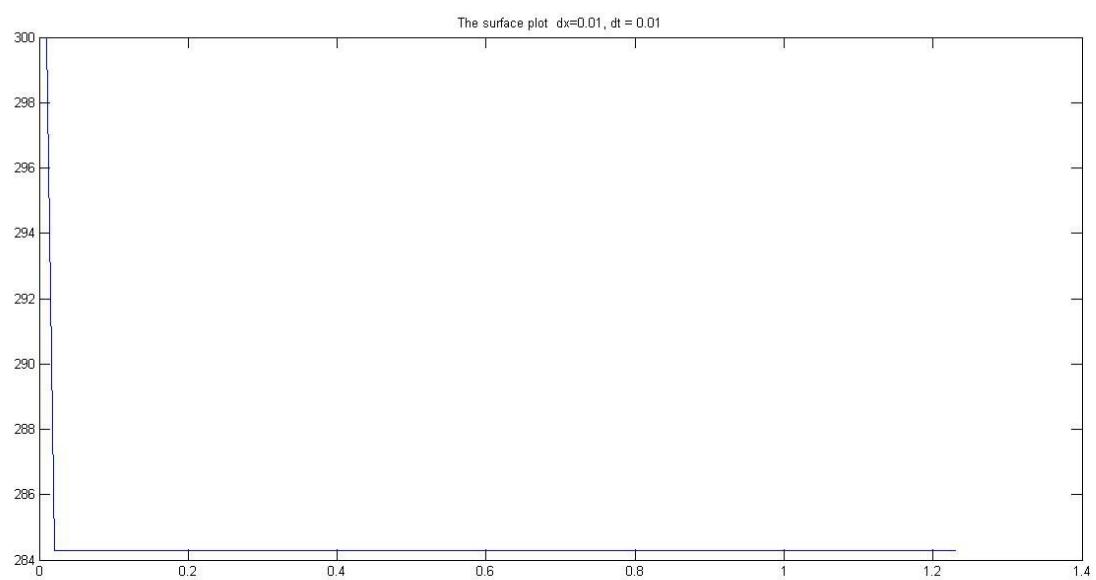
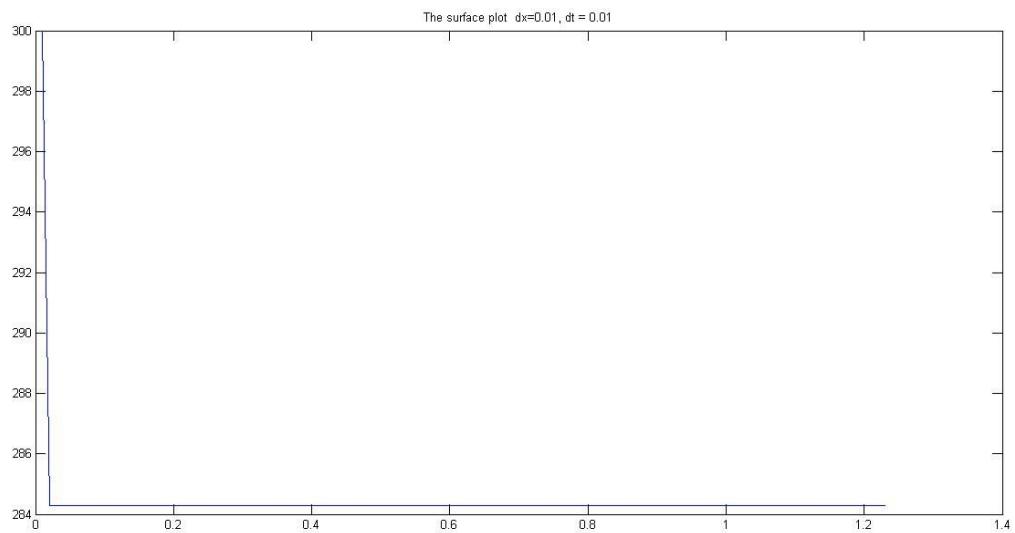


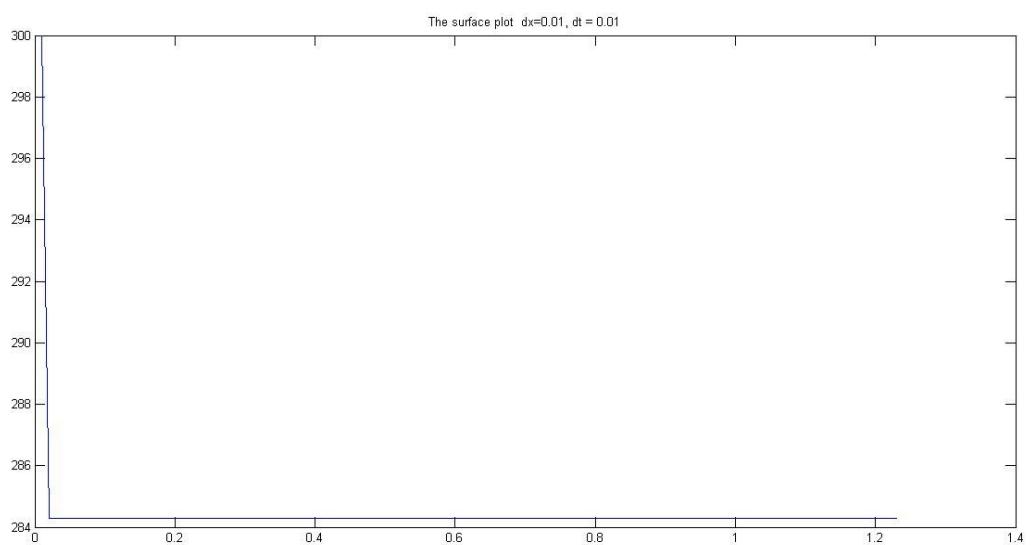
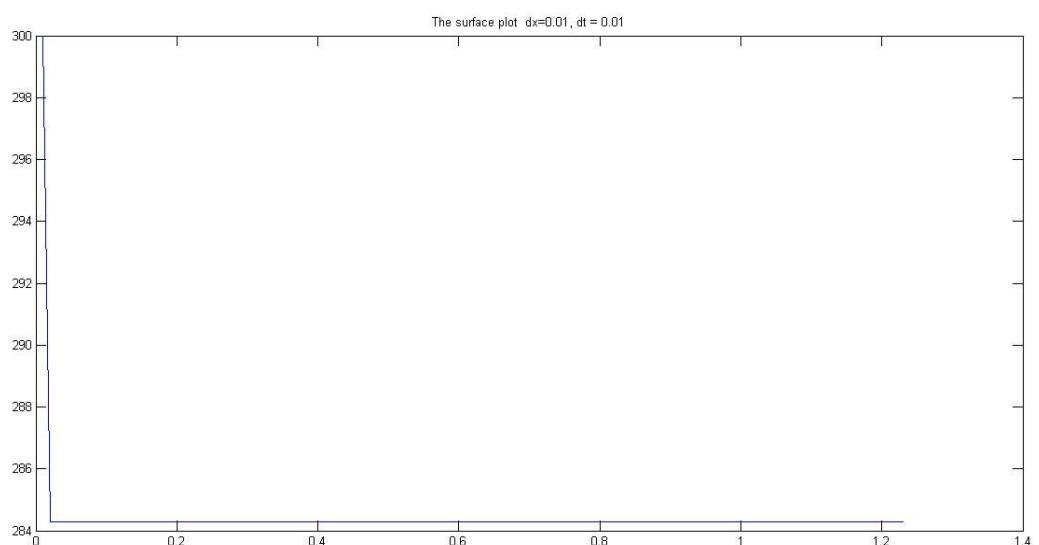


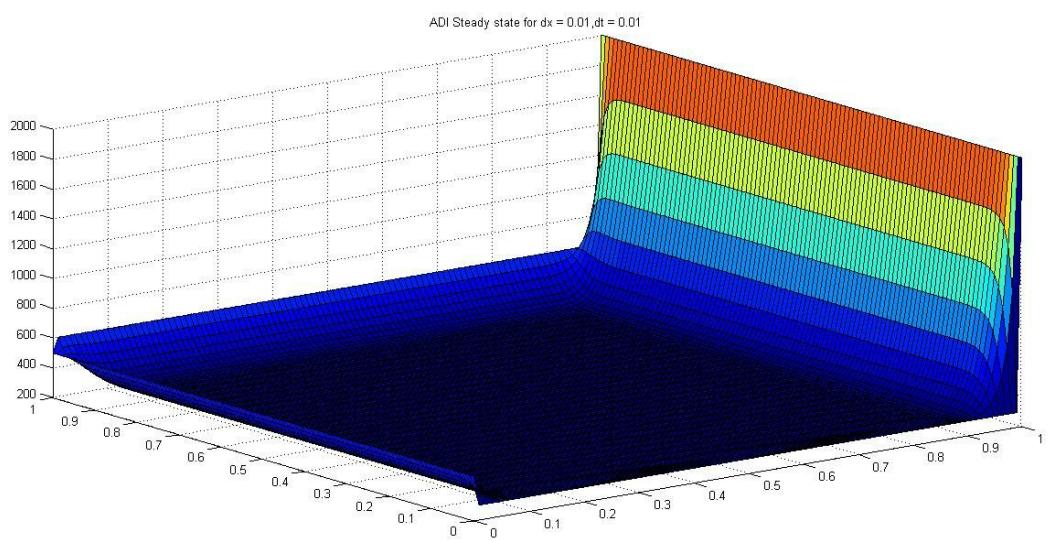
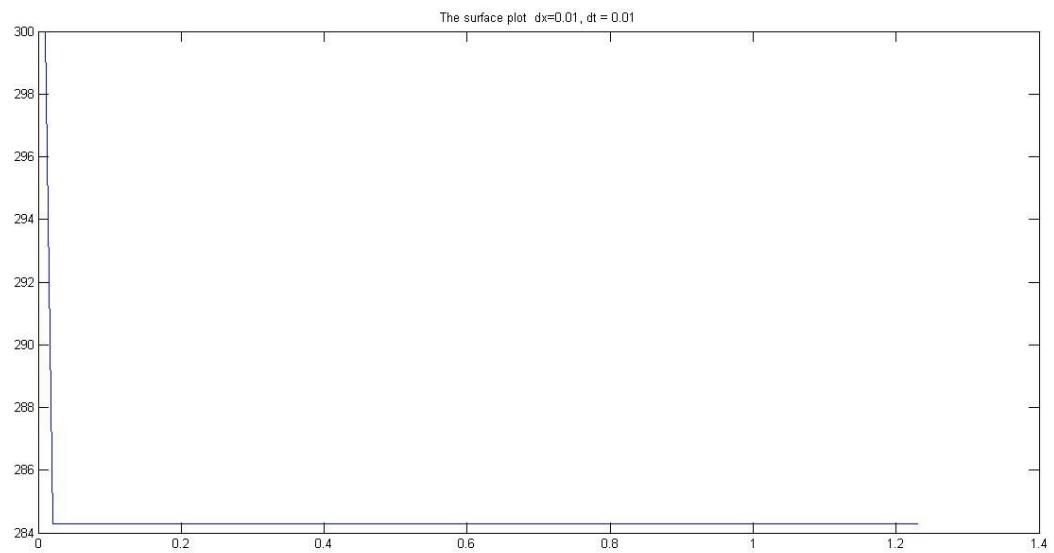


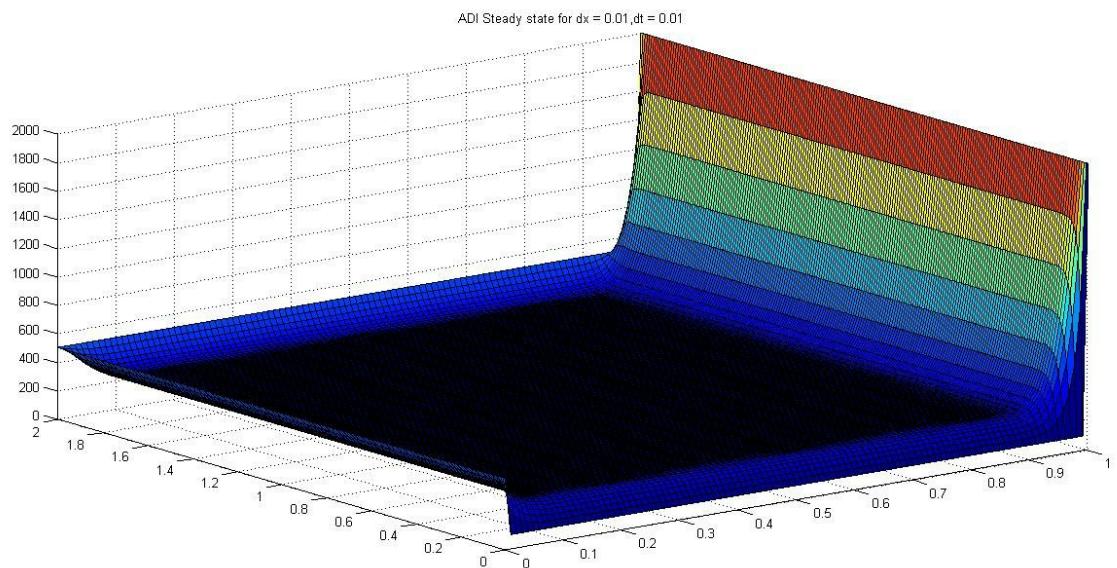
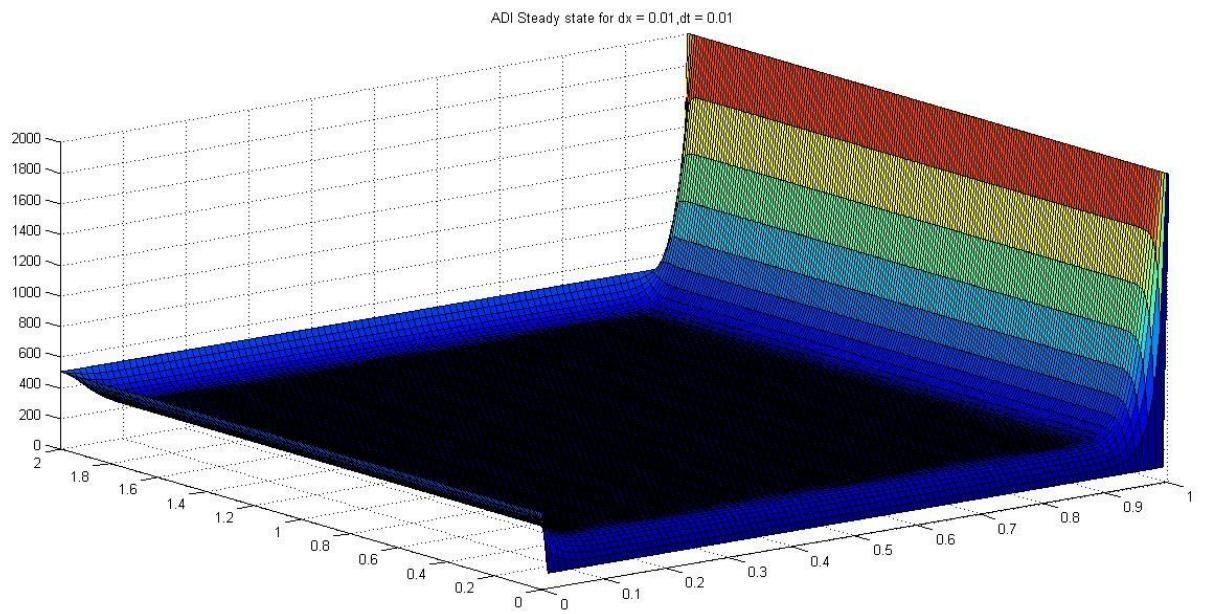


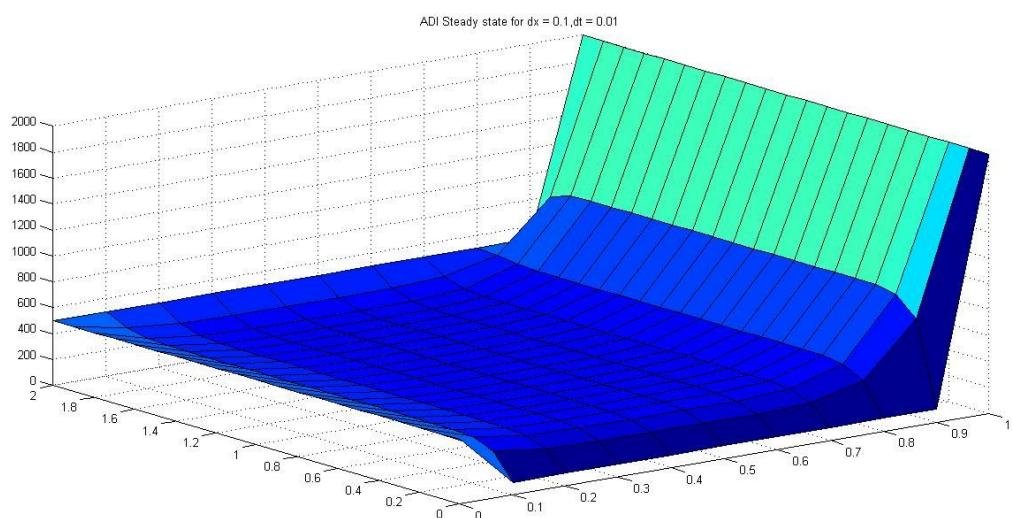
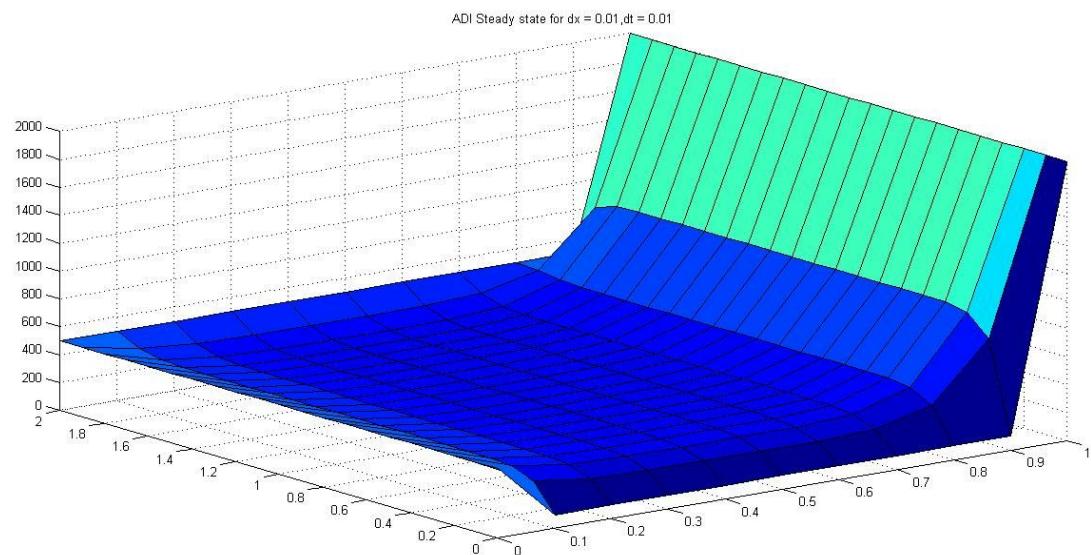
### III.)ADI+CNS

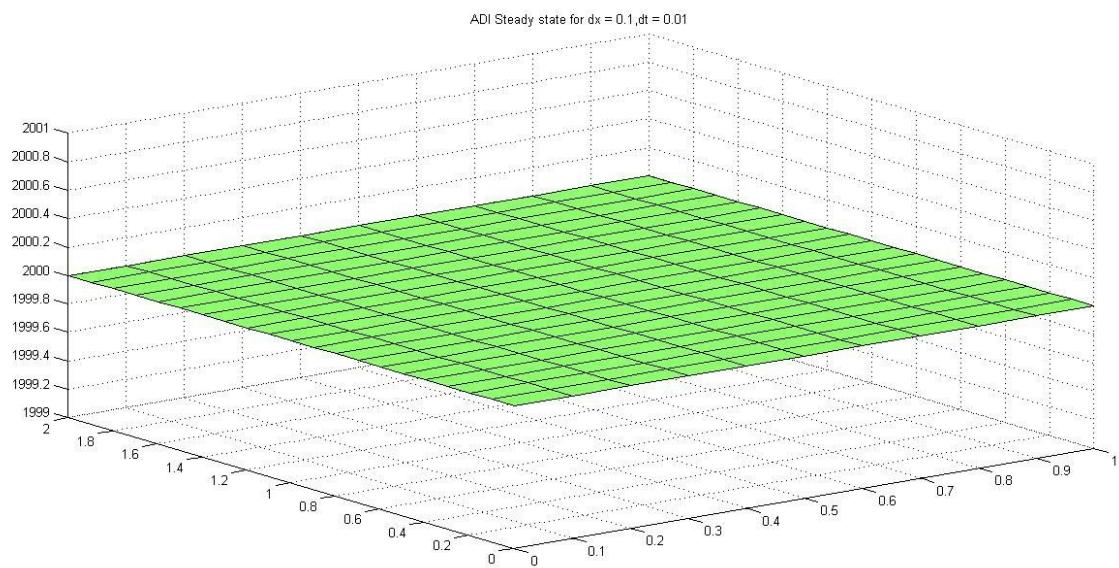
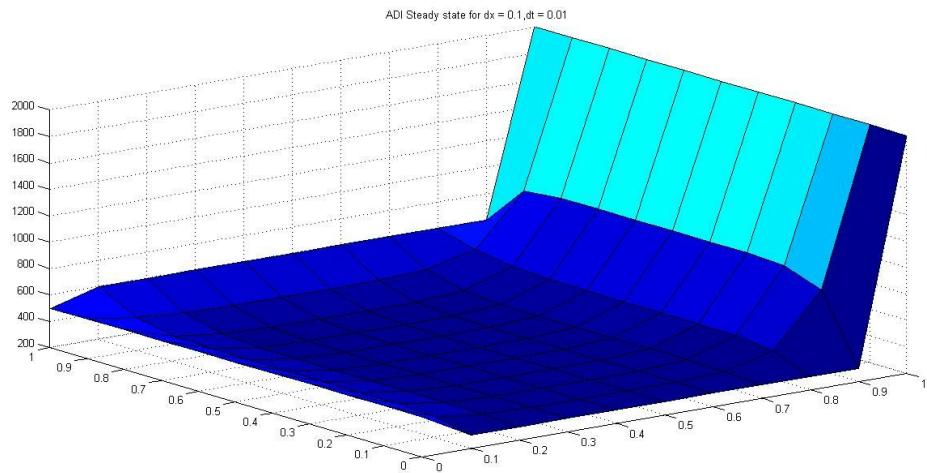


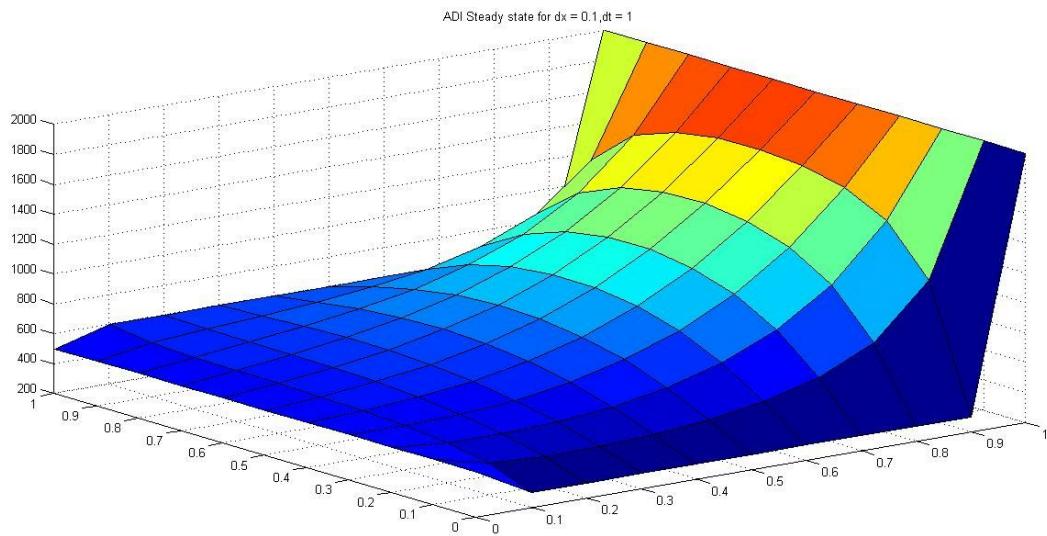


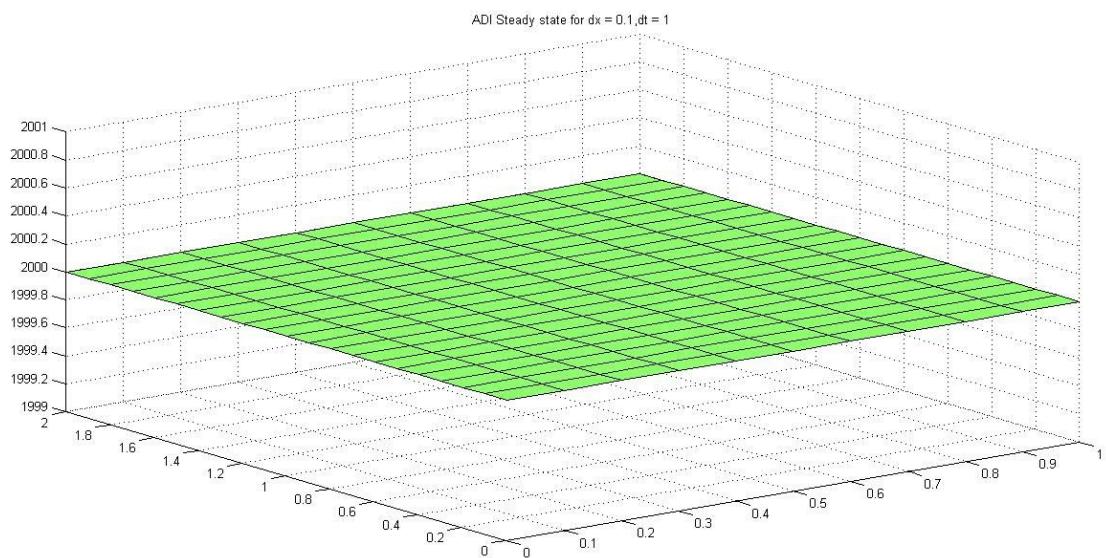
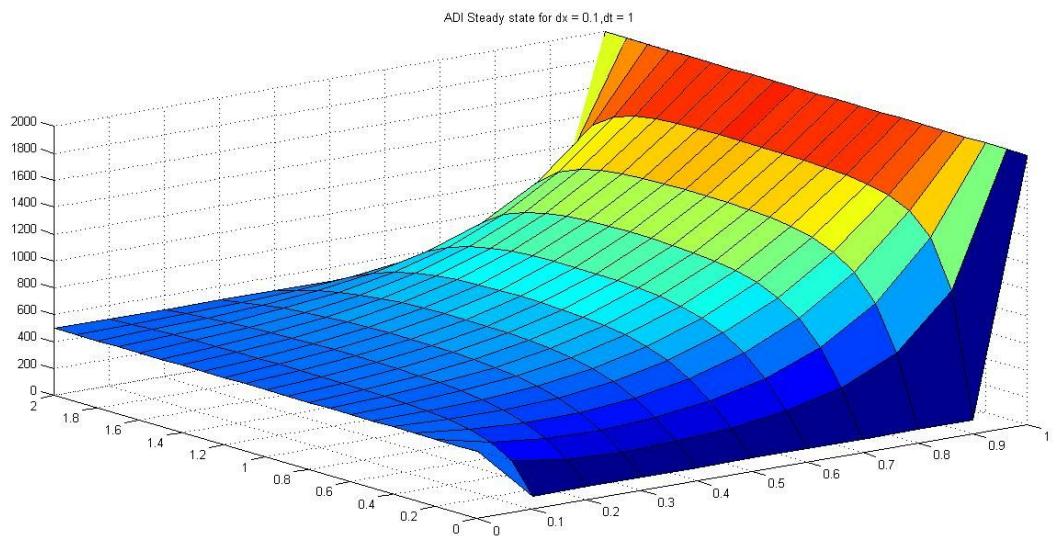












## **Conclusions:**

- 1.) The computational time is definitely less for FTCS as visible from the values, the reason being it has to only do one computation in the nested loop, while the others have to solve a whole **size(x).size(y).size(z)** size of equation atleast 3 times.
- 2.) The FTCS method however being fast enough has a problem of stability as the **Fourier number 'd'** should always be less than 0.125 which is the stability criteria.