

# Assignment-7 and 8

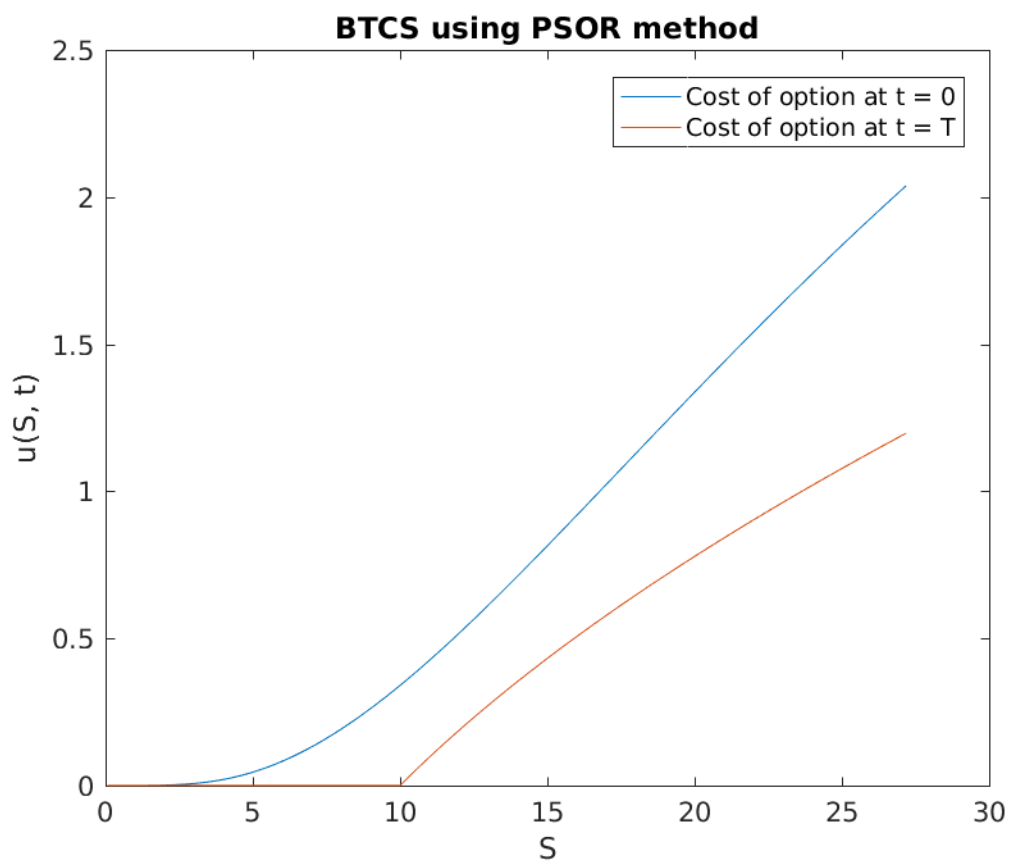
Abheek Ghosh

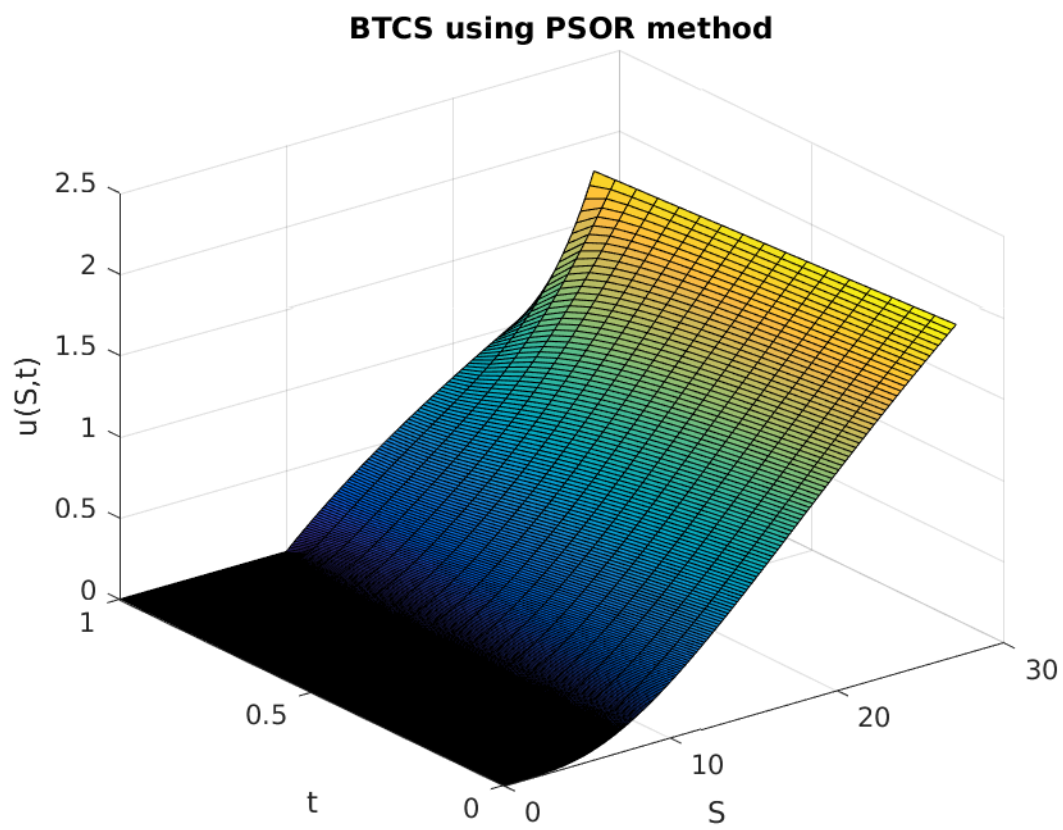
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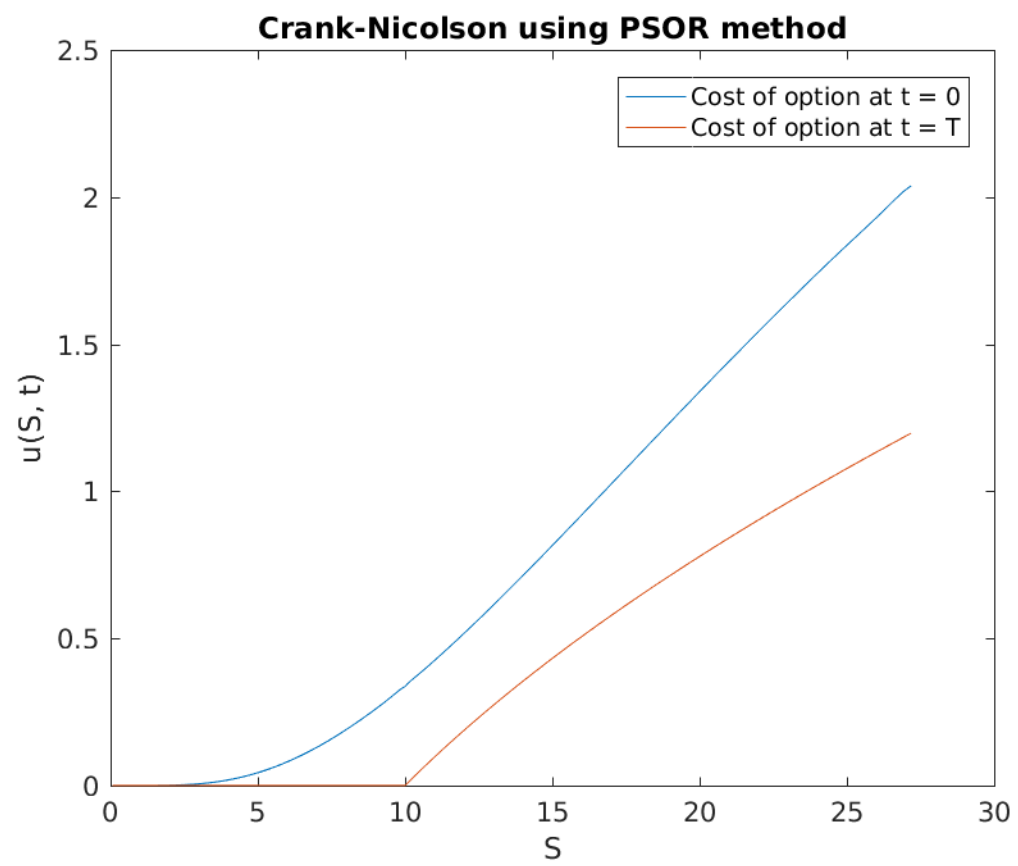
March 14, 2018

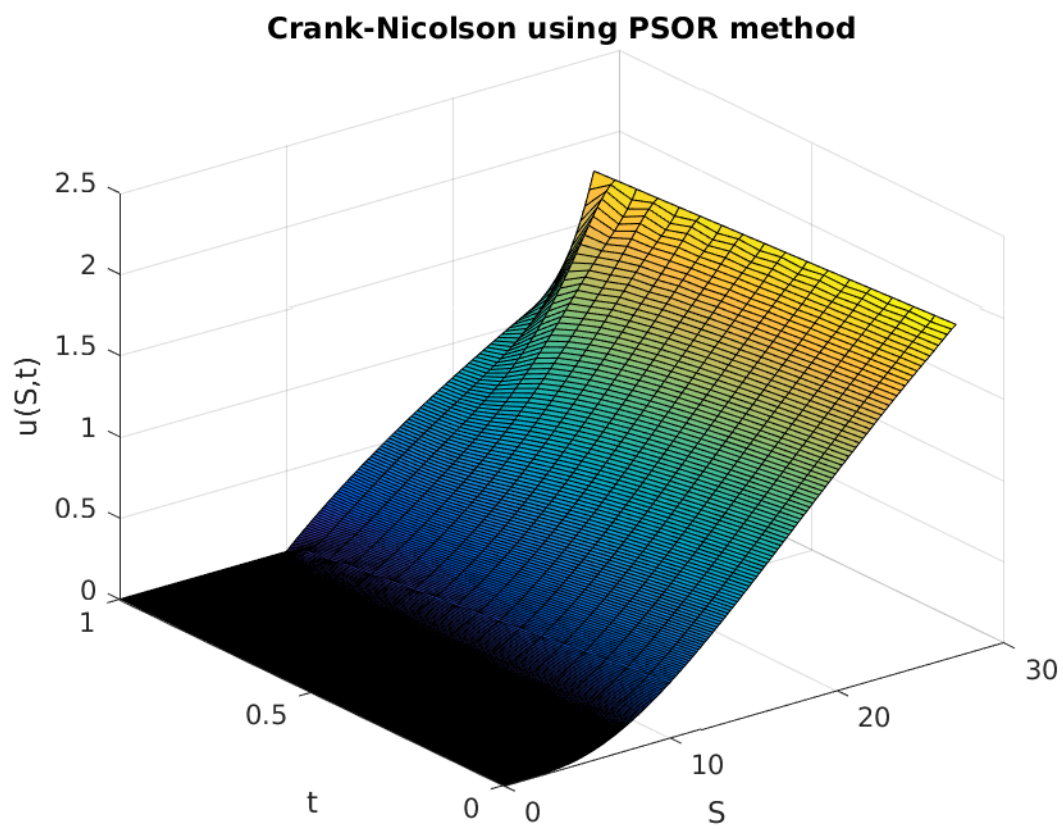
For extreme values of  $S$  (or  $x$ ) the error in the plots is mainly due to the error in computing the boundary condition because we don't have  $x = \infty$  and  $-\infty$  as required. Our  $x$  has a small range  $-5$  to  $1$ .

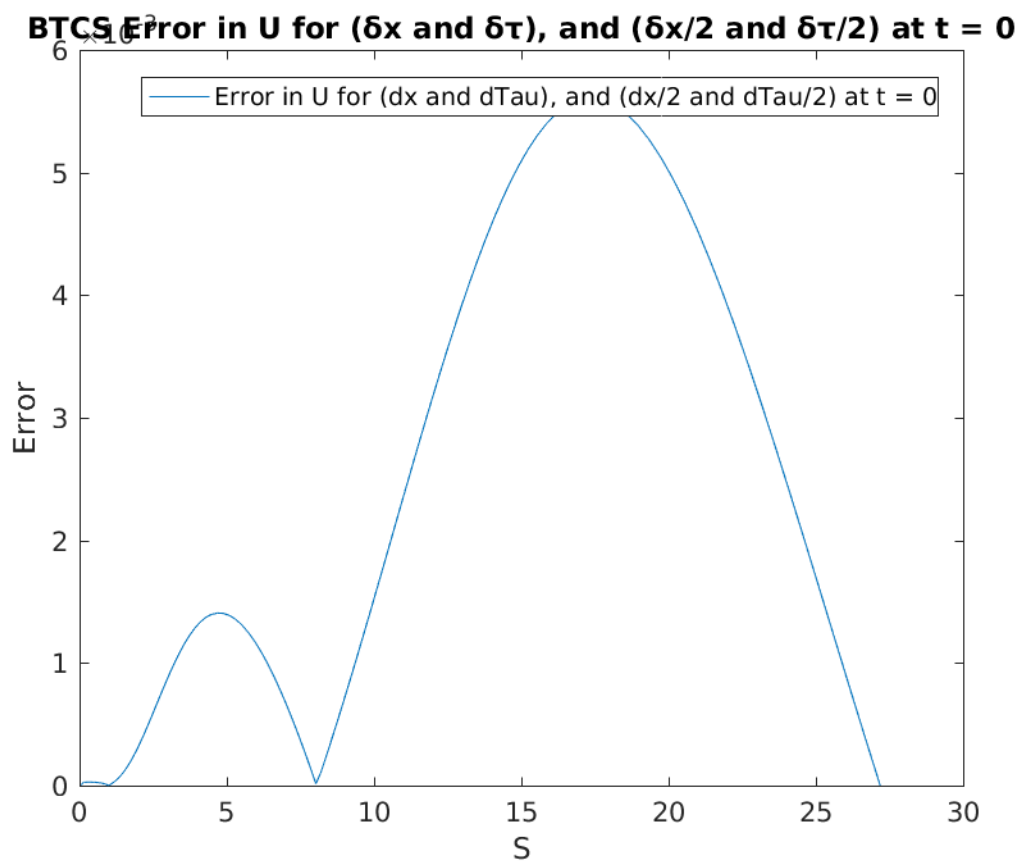
## Question 1

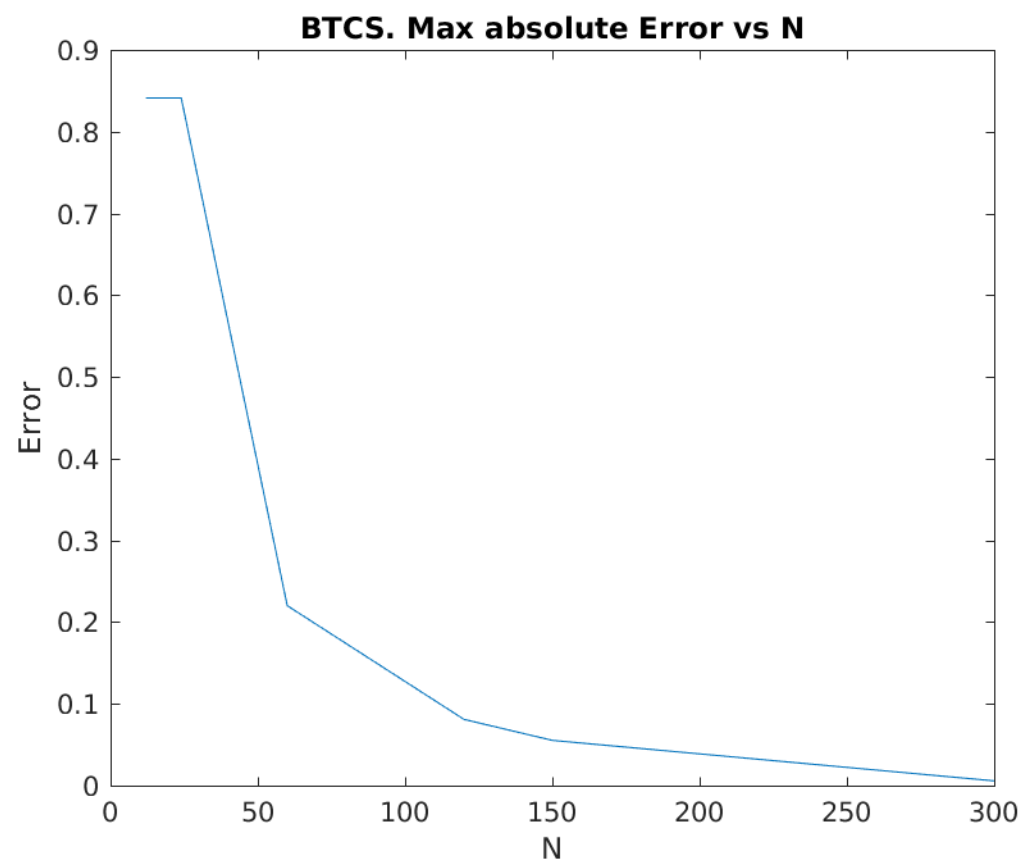




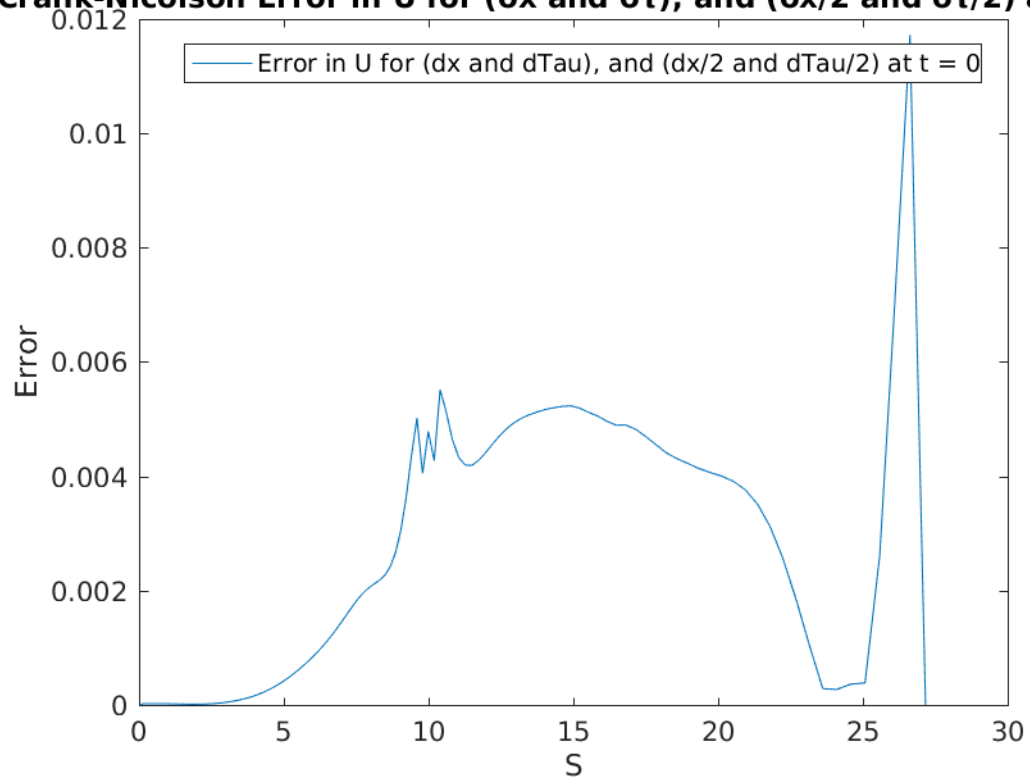


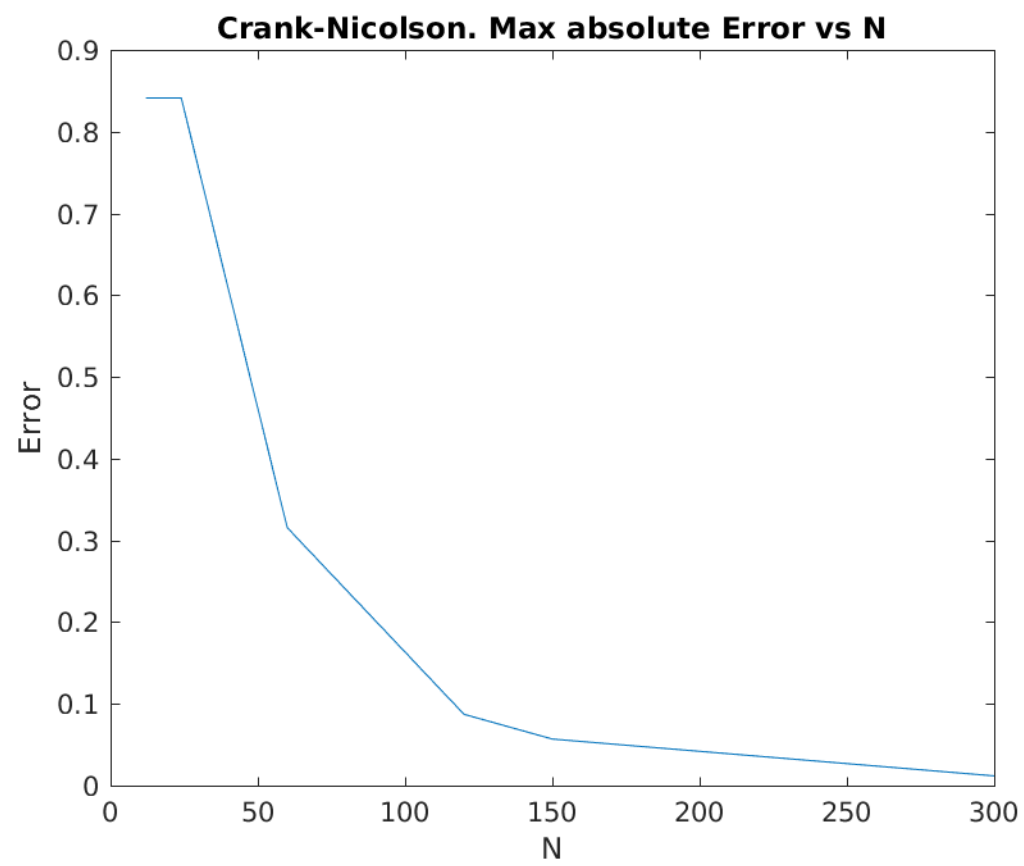






**Crank-Nicolson Error in U for ( $\delta x$  and  $\delta \tau$ ), and ( $\delta x/2$  and  $\delta \tau/2$ ) at  $t =$**

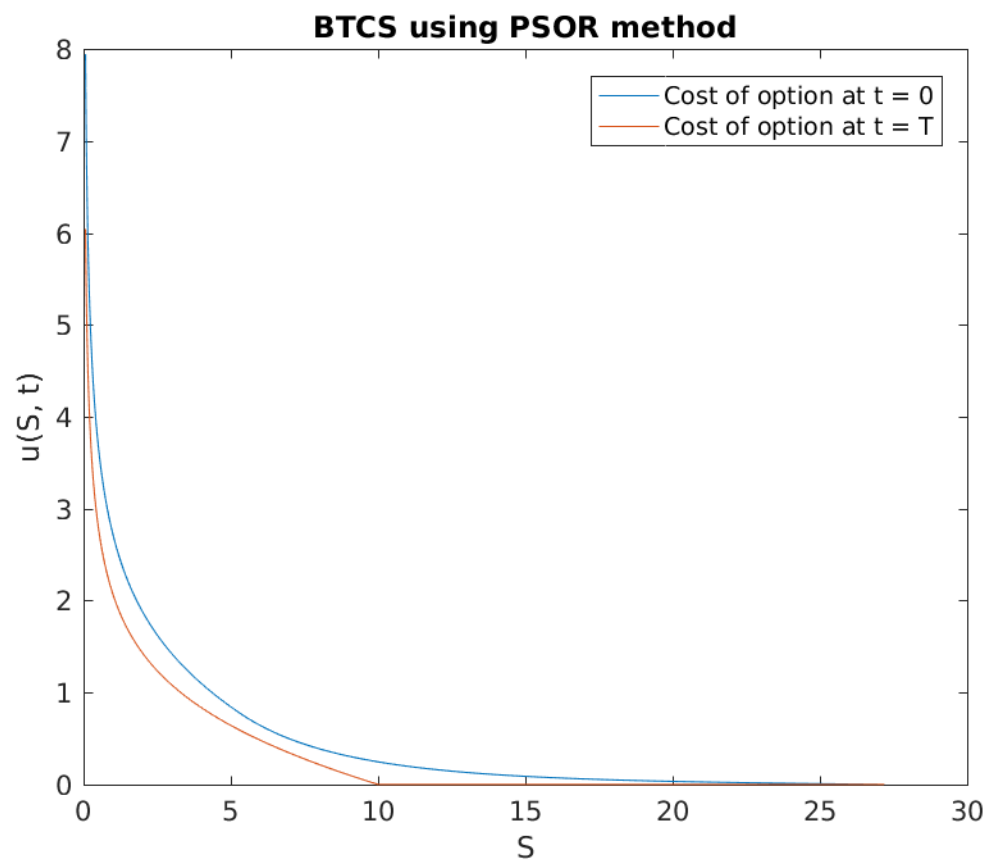


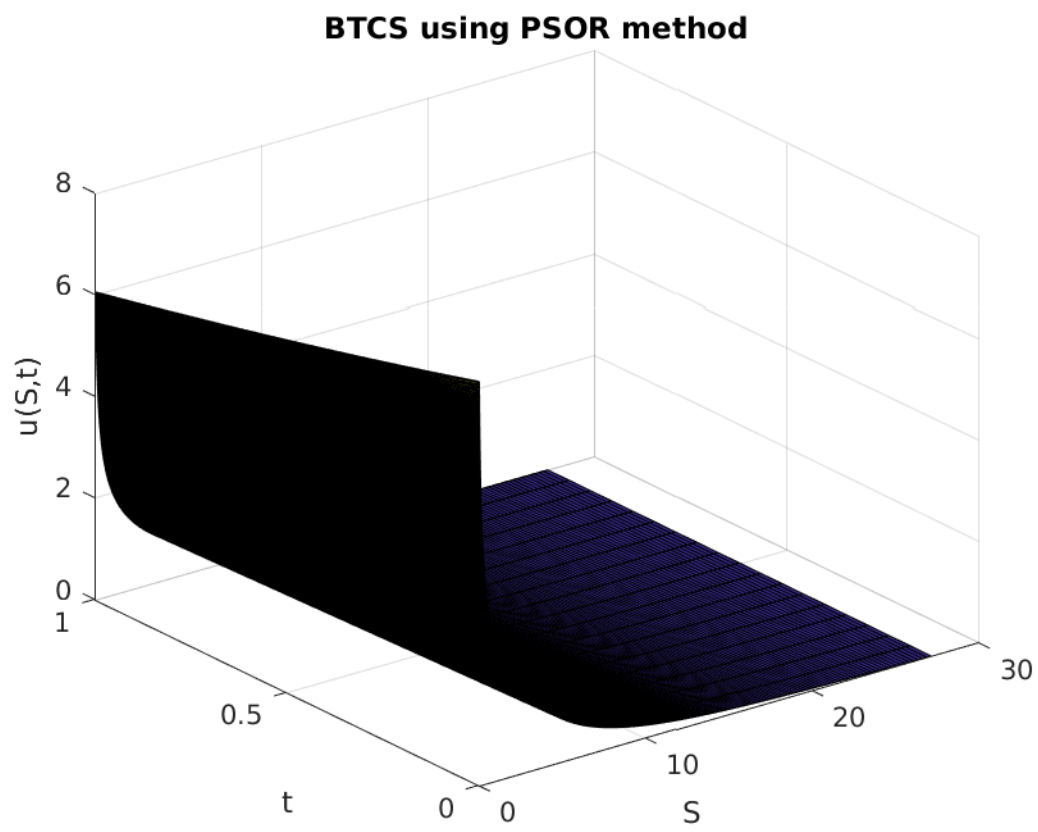


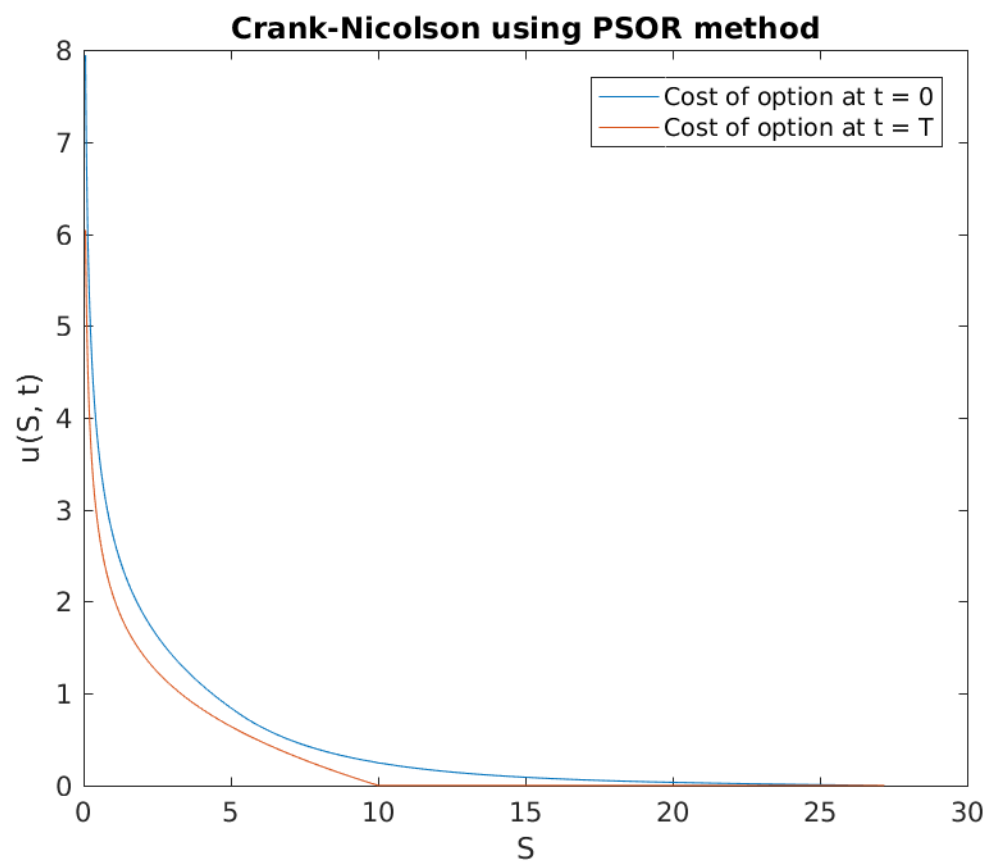


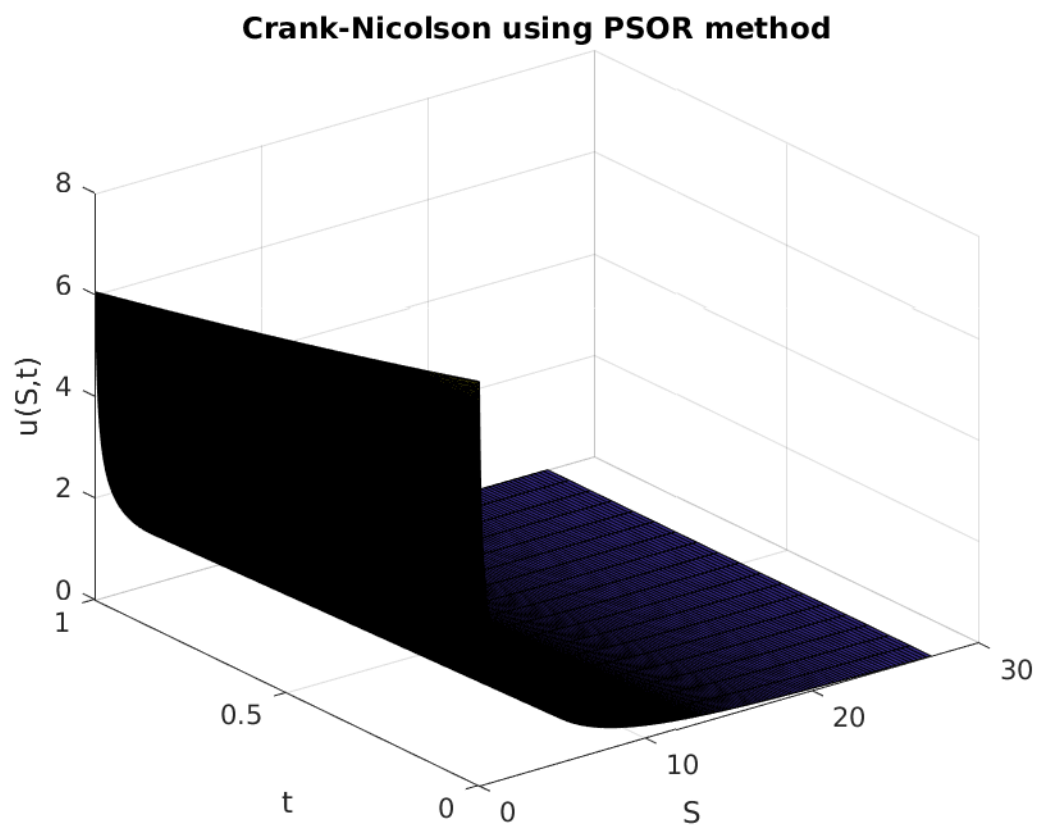
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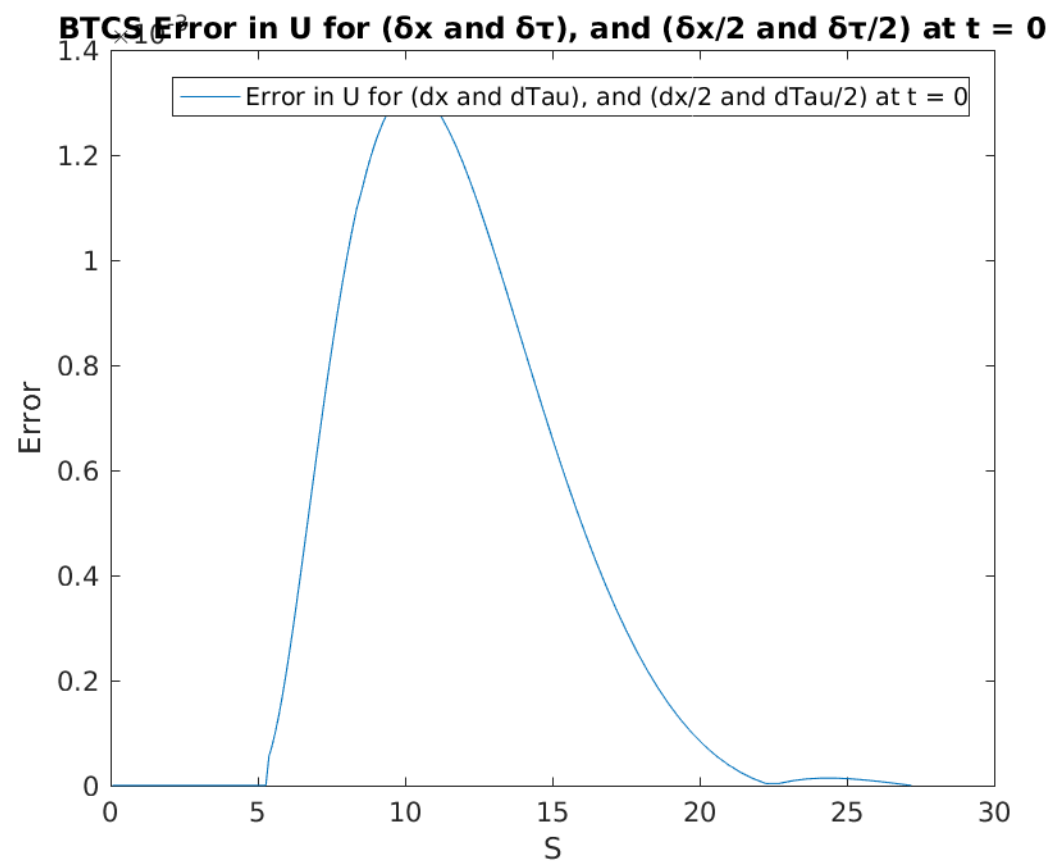
## Question 2

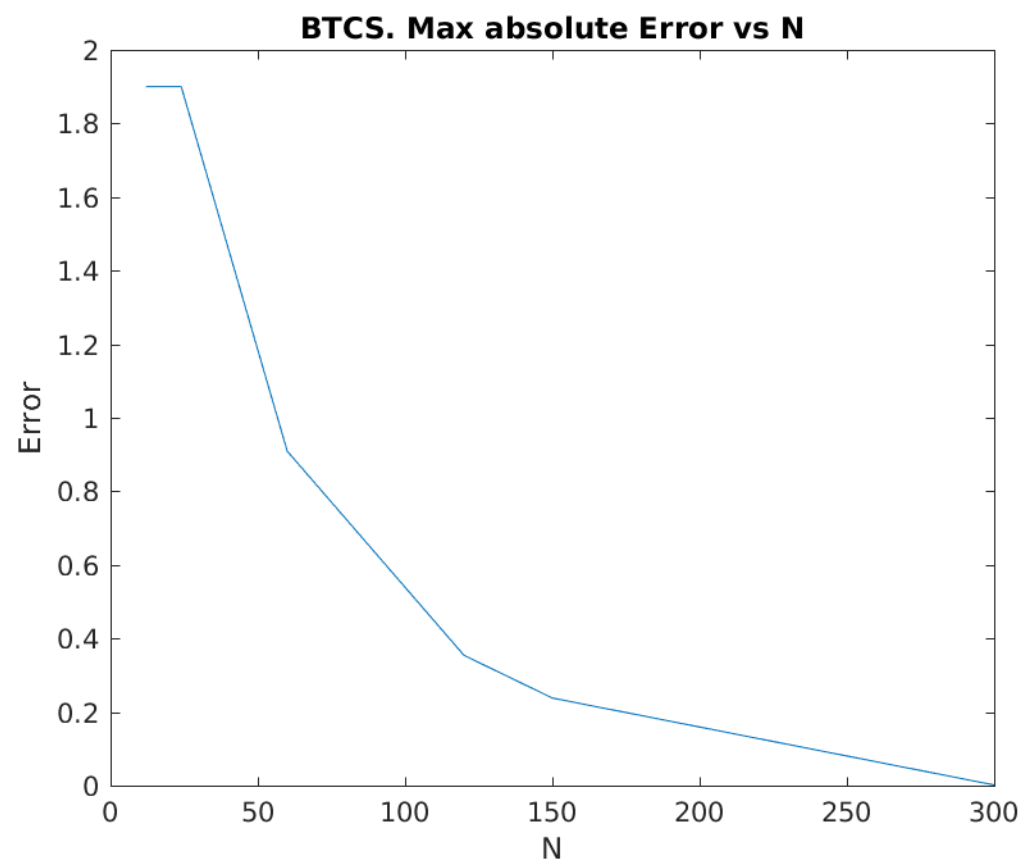












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**Crank-Nicolson Error in U for ( $\delta x$  and  $\delta \tau$ ), and ( $\delta x/2$  and  $\delta \tau/2$ ) at  $t =$**

