

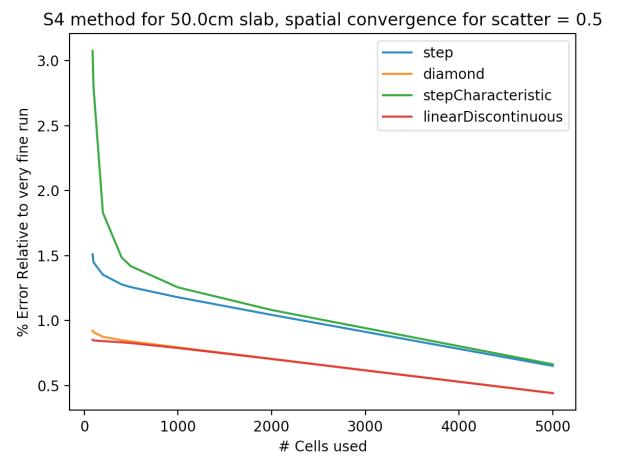
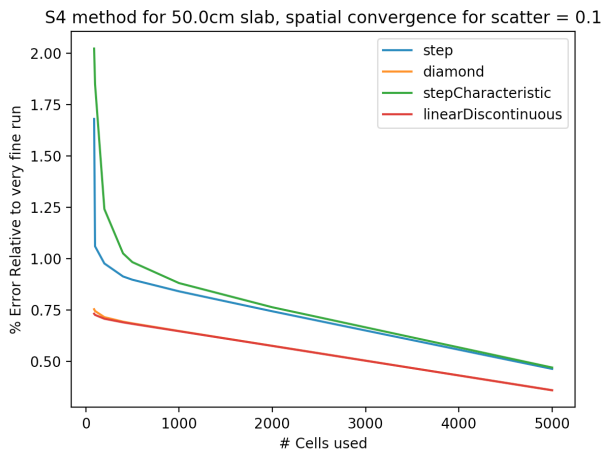
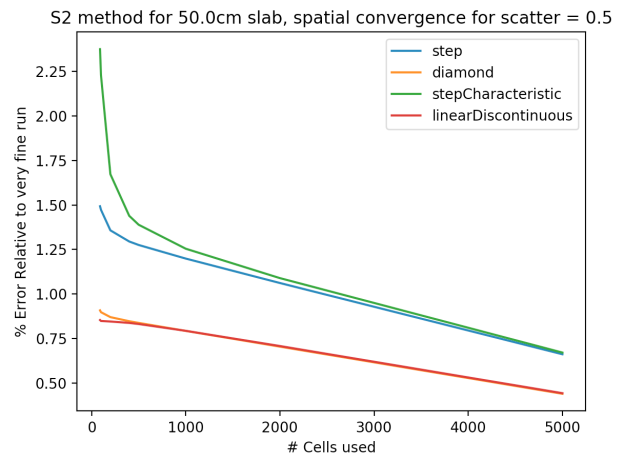
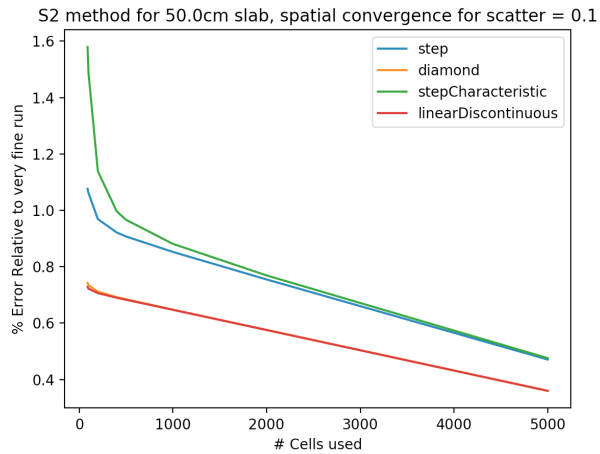
# $S_N$ Method

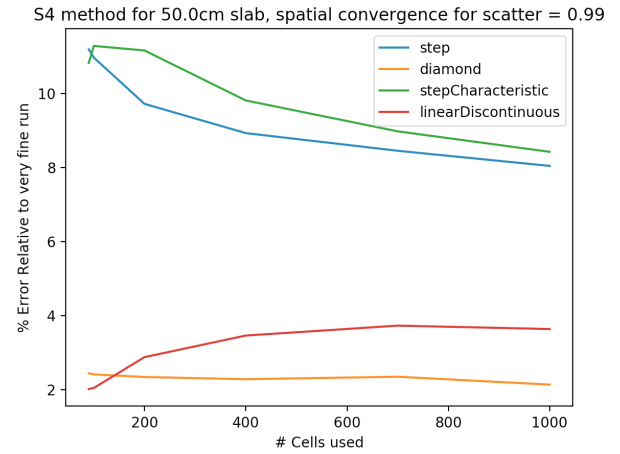
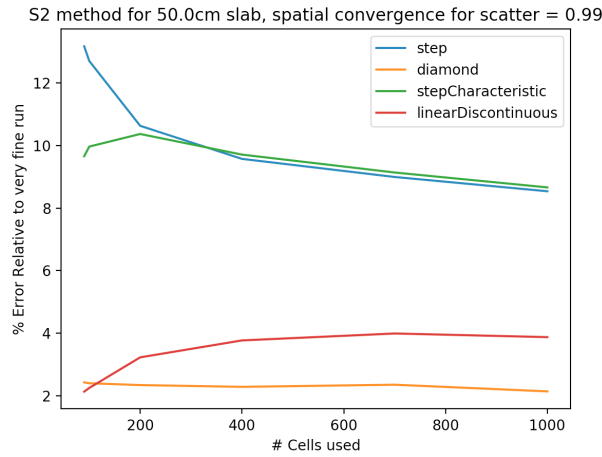
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## Homogenous Slab

Here are the convergence plots for a 50 cm slab homogeneous slab, using 10,000 cells to be the “good” answer with which to judge my errors on.





It seems that for all methods, having a  $\text{SigS} = 0.1$  requires 6 iterations, having a  $\text{SigS} = 0.5$  requires 18 iterations, and  $\text{SigS} = 0.99$  requires about 700-800 iterations (depending on mesh size), except for Step Characteristic which requires as few as 200 iterations for 0.99  $\text{SigS}$  value.

S2,S4 Step  $\text{SigS} = 0.1 = 6$

S2,S4 Step  $\text{SigS} = 0.5 = 18$

S2,S4 Step  $\text{SigS} = 0.99 = 700\text{-}800$  for various numbers of cells

S2,S4 Diamond  $\text{SigS} = 0.1 = 6$

S2,S4 Diamond  $\text{SigS} = 0.5 = 18$

S2,S4 Diamond  $\text{SigS} = 0.99 = 700\text{-}800$  for various numbers of cells

S2,S4 Step Characteristic  $\text{SigS} = 0.1 = 6$

S2,S4 Step Characteristic  $\text{SigS} = 0.5 = 18$

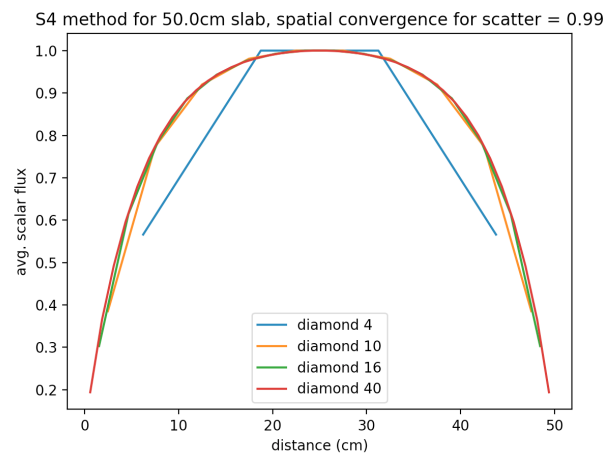
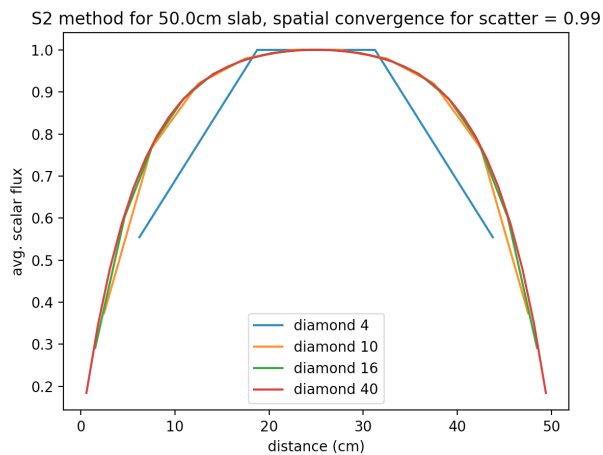
S2,S4 Step Characteristic  $\text{SigS} = 0.99 = 200\text{-}700$  for various numbers of cells

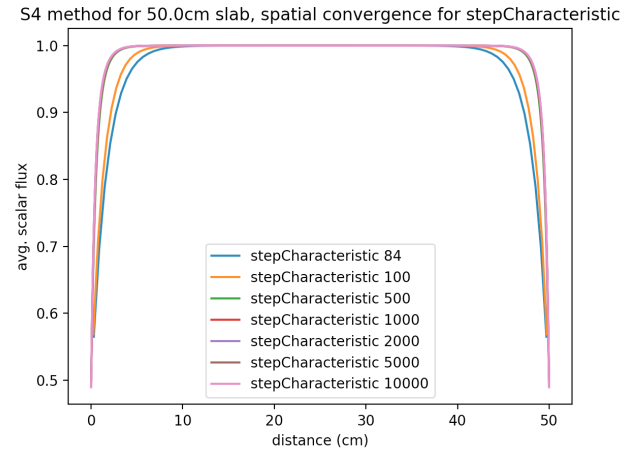
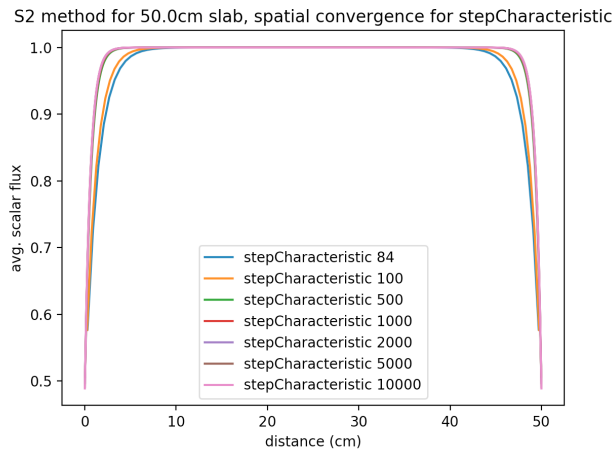
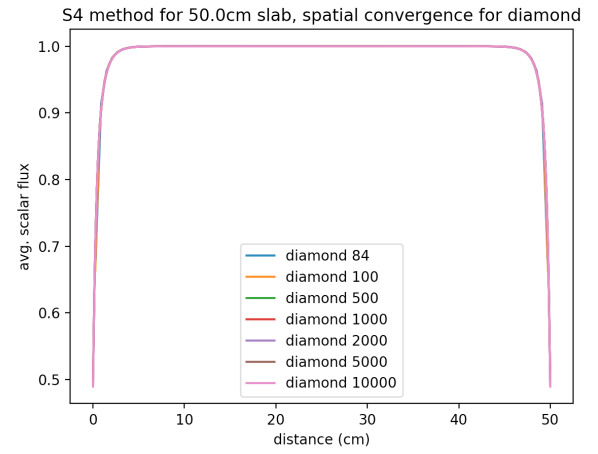
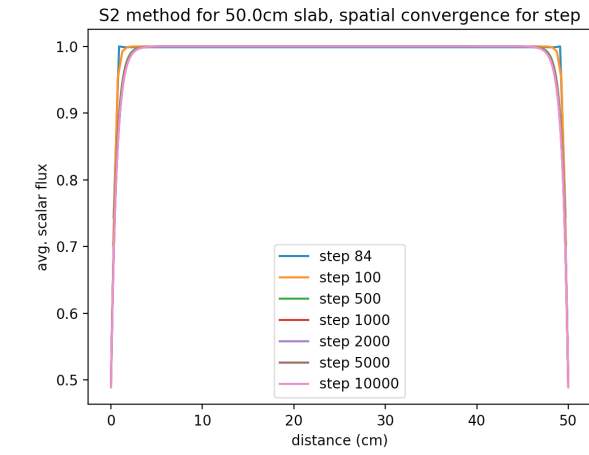
S2,S4 Linear Disc.  $\text{SigS} = 0.1 = 6$

S2,S4 Linear Disc.  $\text{SigS} = 0.5 = 18$

S2,S4 Linear Disc.  $\text{SigS} = 0.99 = 700\text{ish}$  for various numbers of cells

Here are some examples of plots I made





## Heterogeneous Slab