**Erlangga and Turkel (2012) Model**

The exact solution is:

Proof: The boundary conditions follow trivially. The Helmholtz equation follows from:

We note that:

=>

; ☺, i.e. the Helmholtz eq.

We now compare Erlangga and Turkel (2012) with Wong and Li (2011)

Check consistency with:

(taking the real part seems consistent with the sign)

We note that



☺

Note that for relevant outgoing waves in the Sommerfeld condition, you will probably want to require that remains real, i.e.

as well as positive, *i.e.* the + sign after square root.