3D amplification factor - verifying separable generalization

Using the result from the 2D and 3D Douglas ADI,

For simplicity, let

Substitute for error and we have

Therefore

Or

# Amplification factor

Let

And finding the **least common denominator**, we have

Looking at only the numerator, we have

Therefore our result looks like

# Desired form

I would like to write the numerator in the form

Expanding this out, we have

Or

If we assume that the 3rd order term is negligible, then we may write the original in the form

But strictly speaking, this is not true.