Subject: Re: Solving elliptic equation in IDL
Posted by mvukovic on Mon, 18 Aug 2003 16:00:37 GMT
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Mark Hadfield <m.hadfield@niwa.co.nz> wrote in message
news:<bhp3fkkah1@newsreader.mailgate.org>...
> Hi guys
ahem, guys -> folks may be more inclusive :-)
>
> I want to solve an elliptic equation on a rectangular portion of the
> (x,y) plane, specifically
>
> L(A) = f(x,y)
>
> where A is an unknown, scalar-valued 2D array, L is the Laplacian
> operator (d2/dx2 + d2/dy2) and the RHS (forcing) term is a function of
> space only. A is specified at the boundary.
>
> This can be done with an elliptic equation solver, of the type that
> can be found in many general-purpose mathematical libraries. However a
> Google search has not uncovered any IDL code to do this. So I have two
> questions:
>
> - Does anyone have or know of an IDL elliptic equation solver?
>
> - If I choose to solve the equation in Fortran (Compaq Visual
> Fortran 6.6B, IMSL Fortran Library,IDL 6.0, Windows 2000), what is the
> path of least resistance for passing data between Fortran and IDL? A
> DLM? Can I call a Fortran subroutine directly from IDL or will I
> need to write glue code in C?

The wayyy simplest, for me, (and ugly as hell) was to write a
stand-alone fortran program, and communicate via files. The fortran
program was called using the spawn command.

Ugly, but worked quickly.

Mirko