Subject: Solving elliptic equation in IDL
Posted by Mark Hadfield on Sun, 17 Aug 2003 23:35:14 GMT
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Hi guys

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?

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