Subject: 3d matrices and LUSOL
Posted by Manish on Thu, 24 Jan 2002 18:17:58 GMT
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Hi all,

I am in desperate need of help!!

I have a set of linear equations represented as matrix arrays which need to be solved using the LU decomposition technique. The two arrays consist of a 14 x 14 array, and a 14 x 1 array, but each element in the matrices itself is an array of 221 elements (ie the matrices are 3dimensional...?)

So i need to solve the system using LUDC and LUSOL, but i have to do it 221 times (ie a solution for each 'layer' of the matrices)

The first question is, is there a way to declare the two input arrays as 3-d? I tried defining the matrix using matrix=[[a,b,..],[...,...,...] etc] where a,b,... = arrays, but this isn't recognised as a 14 x14 square matrix which is 221 elements 'deep'. Instead, it expands each array across the row, making it a 3094 x 14 matrix. (it needs to be square to run LUDC)

Is there a way i can force IDL to see it as a 'layered' 3-d matrix?

What i need to achieve is a 3 dimensional 14 x 1 solution array, again 221 elements 'deep'. To get this, could i simply run LUDC and LUSOL as normal provided the inputs are 3d matrices, or do i need to somehow loop the procedures so it produces solutions one 'layer' at a time and builds them into the 3 d solution matrix ?

I don't know if anyone has any idea of what i'm talking about, but i only just understand it myself!!
Apologies if it makes no sense whatsoever, suffice to say i'm a little confused right now!

Any insight into the above would be great,

thanks,

Manish.