Subject: roots of polynomial on a 2d grid
Posted by brooker on Fri, 22 Dec 1995 08:00:00 GMT
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folks,

I have a polynomial function of the form

f(u) = c_o + c_1*u + c_2*u^2 + c_3*u^3

and I want to find all the roots of the polynomial. By the roots of the polynomial I mean the values of u such that f(u)=0. To do this one usually makes an array coefs=[c_o,c_1,c_2,c_3] and the call

roots=nr_zroots(coefs)

All the roots are then stored in the array roots.

This is all fine but ...

Suppose that instead of just one set of coefficients you have an array of sets of coefficients. For example consider

```
c_o=[0,1,3,4]
c_1=[2,2,2,2]
c_2=[4,3,2,1]
c_3=[3,3,4,4]
```

In order to find the roots must you use a FOR loop like

```
roots=fltarr(3,4)
for i=0,3 do begin
  coefs=[c_o(i),c_1(i),c_2(i),c_3(i)]
  roots(*,i)=nr_zroots(coefs)
  endfor
```

Is there any way to find the roots without having to use the for loop??

sorry for the long winded question,

peter brooker