Subject: Multiple parameters for ZEROFCN
Posted by Rick Walton on Mon, 02 Jan 2012 22:41:04 GMT

I would like to find the root of a function f(x) that depends on the
values from an array. Using th IMSL function ZEROFCN appears to only
allow a single parameter to be defined, which is x. But I would like
to vary one of the constants in the function but when I try to use a
userdefined expression for this it causes an error. To demonstrate
what I`m trying to acheive see the function and code below. If anyone
has a simple solution to this I would really appreciate the help.
Thanks in advance.

```
FUNCTION f, x, y
RETURN, ((sinh((1.4 +x-0.25)/(0.4))/(sinh((x-0.25)/0.4)))-y
END

;array containing data for constant y
Y=fltarr(252)

;new file to input zeros
zero=fltarr(252)

;function to determine zeros in f(x)
FOR i=0, 251 DO BEGIN
zero(i)=ZEROFCN("f", y(i))
```

Subject: Re: Multiple parameters for ZEROFCN
Posted by wlandsman on Sun, 15 Jan 2012 15:57:56 GMT

I give an example of using common blocks to pass parameters below.   Since IDL does not have
the PV_WAVE ZEROFCN function, I substituted ZBRENT just to have a function that works for
me.

Note that another limitation of the built-in IMSL/Numerical Recipes functions in IDL is that the
user-supplied function must return a *scalar* value.   So be careful that your extra Y parameter is
also a scalar.   --Wayne

```
FUNCTION  f, x
common fparam, y
RETURN, X^3 + y
END

pro test
common fparam,y
```

```
FOR i = 0, 9 DO BEGIN
Y = i
print, Zbrent(-5,5,func_name="F")
ENDFOR
END
```