
Subject: Re: Pass variables into Newton or BRODYDEN for solving non-linear equations

Posted by [Matt Francis](#) on Mon, 17 Oct 2011 23:13:20 GMT

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On Oct 18, 6:24 am, Zhang Bo <bzhang20071...@gmail.com> wrote:

> I have a non-linear equations system to solve in every loop step. I
> have 4 equations with 8 variables. 4 of the variables are known and
> calculated in each loop. I cannot find a way to pass the known
> variables(which are different in each loop) into a BRODYDEN or NEWTON
> function to solve the system. If I put all 8 variables as input guess,
> it won't calculate for me because there are 8 variables and 4
> equations. I kind of stuck here.

When I encountered a similiar issue using AMOEBA, the only solution I could see was to cover myself with garlic and use a COMMON block. I set the extra variables I want to send to each call before making that call and have the COMMON block visible from within the user defined function you send to NEWTON or whatever.

Does that make sense?

Subject: Re: Pass variables into Newton or BRODYDEN for solving non-linear equations

Posted by [Zhang Bo](#) on Tue, 18 Oct 2011 01:10:50 GMT

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On Oct 17, 7:13 pm, Beaker <mattjamesfran...@gmail.com> wrote:

> On Oct 18, 6:24 am, Zhang Bo <bzhang20071...@gmail.com> wrote:
>

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> Does that make sense?

Like this?

```
common lclinput, A, B, C, D
A = ****
B = ****
C = ****
D = ****
X = [250, 20, 6.2, 750]
Result = broyden(X,'lcl')
```

```
FUNCTION LCL, X
COMMON lclinput, A, B, C, D

return, [X[0]-T_s*(X[1]/P_s)^(287/cp_s),$
X[2] - X[3]*Mmr_s/(0.622+Mmr_s),$
X[1]-26.66082+alog(X[1]),$
X[0] - (X[1]-sqrt(X[1]^2-223.1986))/0.0182758048]
END
```

Subject: Re: Pass variables into Newton or BROYDEN for solving non-linear equations

Posted by [Matt Francis](#) on Tue, 18 Oct 2011 01:20:51 GMT

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Yep that looks right, assuming you actually use the values A,B,C,D in the LCL function (are they to replace the constants you have in there, such as 223.1986 etc??).

Subject: Re: Pass variables into Newton or BROYDEN for solving non-linear equations

Posted by [Zhang Bo](#) on Tue, 18 Oct 2011 15:47:19 GMT

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On Oct 17, 9:20 pm, Beaker <mattjamesfran...@gmail.com> wrote:

> Yep that looks right, assuming you actually use the values A,B,C,D in
> the LCL function (are they to replace the constants you have in there,
> such as 223.1986 etc??).

yes, they replace T_s, Mmr_s etc. Thanks a lot!