
Subject: Re: Singular jacobian in broyden
Posted by [Ralf Schaa](#) on Thu, 24 Feb 2005 09:53:20 GMT
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Jerome Colin wrote:

> Hello,
>
> I try to use the Broyden function to resolve a set of three equations.
> I've declared the three equations in a function, and provided initial
> guess. The code is compiled well, but I get the message :
> 'Singular jacobian in broydn'
>
> As I'm not familiar with this method, I'd appreciate any help and/or
> comments about the source of this error.

Jerome,

Please have a look at the numerical recipes, Chapter 9.7 "Root Finding and Nonlinear Sets of Equations". On page 382 you will find the paragraph "Multidimensional Secant Methods: Broyden's Method" and on page 386 there is a comment on singular jacobians.
Download the pdf-files from numerical recipes e.g. at:
<http://www.library.cornell.edu/nr/cbookfpdf.html>

I had difficulties using Broyden method's as implemented in IDL following the numerical recipes, since it is very strong depending on the start vector.
I used methods in Mathematica though and had 'the feeling' it worked better, but I could not prove it.

-Ralf
