
Subject: ODEPACK

Posted by [ushomirs](#) on Thu, 09 Sep 1999 07:00:00 GMT

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Hi,

It looks like IDL 5.2 includes one of the ODEPACK routines, LSODE. But that's just the basic routine, FORTRAN ODEPACK on Netlib (which is where i think they got the routine) has several more sophisticated routines.

In addition, it seems that RSI has done a sloppy job integrating LSODE into IDL. they don't support all the options the original LSODE has, including the useful ones, like single-stepping through the integration. the documentation seems haphazardly put together. for example, their description of output value STATUS=3 is

"The integration was performed successfully, and no roots were found"

what roots?? anyway, this makes me doubt the correctness of the implementation.

Anyway, I have 2 questions.

(1) does anyone know if RSI has plans to integrate the rest of ODEPACK routines into IDL??

(2) Since the answer to (1) is probably "No", how do I call an IDL routine from a DLM (dynamically loadable module)?? What i'm thinking is just compiling all of the odepack routines into a dlm, and writing and IDL interface. however, i would need to pass the function that computes the right-hand side of the differential equation to the FORTRAN routine in a dlm. IDL external development guide describes how to call external routines from IDL, but not the other way around.

Please note that "Callable IDL" is probably ****not**** what's needed here. It seems to me that "callable idl" inits a whole separate copy of idl, which is clearly not what i need here. (unless i'm wrong on this point).

greg

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Subject: Re: ODEPACK

Posted by [ushomirs](#) on Sat, 18 Sep 1999 07:00:00 GMT

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In article <TILE3.1538\$%4.33531@news6.giganews.com>,

"<none>" <slett@holisticmath.com> wrote:

> It is actually based on LSODAR, also from ODEPACK. I think this fact is in

> IDL's documentation.

>

i'm sure you're right about their routine being based on LSODAR.

However, i just scanned the on-line help for LSODE again, in it does not mention LSODAR ****anywhere****. it just refers to the general documentation for ODEPACK.

> however, because I don't know that RSI ever exposed the rootfinding

> capability of LSODAR to the user. Even so, since LSODAR can return

besides not exposing rootfinding, they also hardcoded just one choice of error control (atol and rtol) out of the many possibilities present in the original ODEPACK.

> possible, and may even be documented. If it isn't documented, it may be

> proprietary information. If so, I'm not allowed to divulge it. :(

well, i looked through their external development guide, and it's not there..

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Subject: Re: ODEPACK

Posted by [Anonymous](#) on Sat, 18 Sep 1999 07:00:00 GMT

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Originally posted by: none

It is actually based on LSODAR, also from ODEPACK. I think this fact is in IDL's documentation.

The R in LSODAR stands for root, and you can read ODEPACK's documentation to

figure out what the rootfinding capability means. The point may be moot, however, because I don't know that RSI ever exposed the rootfinding capability of LSODAR to the user. Even so, since LSODAR can return STATUS=3, it is conceivable you can get that return status.

The ability to use callbacks to get to IDL functions from ODEPACK is possible, and may even be documented. If it isn't documented, it may be proprietary information. If so, I'm not allowed to divulge it. :(

<ushomirs@my-deja.com> wrote in message news:7r90g4\$rbq\$1@nnrp1.deja.com...

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