

**Comparison: COMNIN, CG_DESCENT, CG FAM and
DLDC on inviscid and viscid parabolized Navier-Stokes
equations given by
Prof. I.M. Navon and Prof. J. Steward,
Florida State University**

E-mail from Prof. I. M. Navon

Draga Neculai,

Iata primele rezultate cu DLDC. In cazul nostru (inviscid si viscid Parabolized Navier Stokes). DLDC atinge rezultate fantastice cu eroare de 10^{-6} dar consumă multe iteratii ~1800. In orice caz este un pas foarte interesant. Cu mult drag la toata familia. Michael

----- Original Message -----

From: Jeff Steward <jeffsteward@gmail.com>

Date: Monday, September 28, 2009 4:09 pm

Subject: DLDC vs other CG methods: results

To: Michael Navon <inavon@fsu.edu>

Dear Professor Navon,

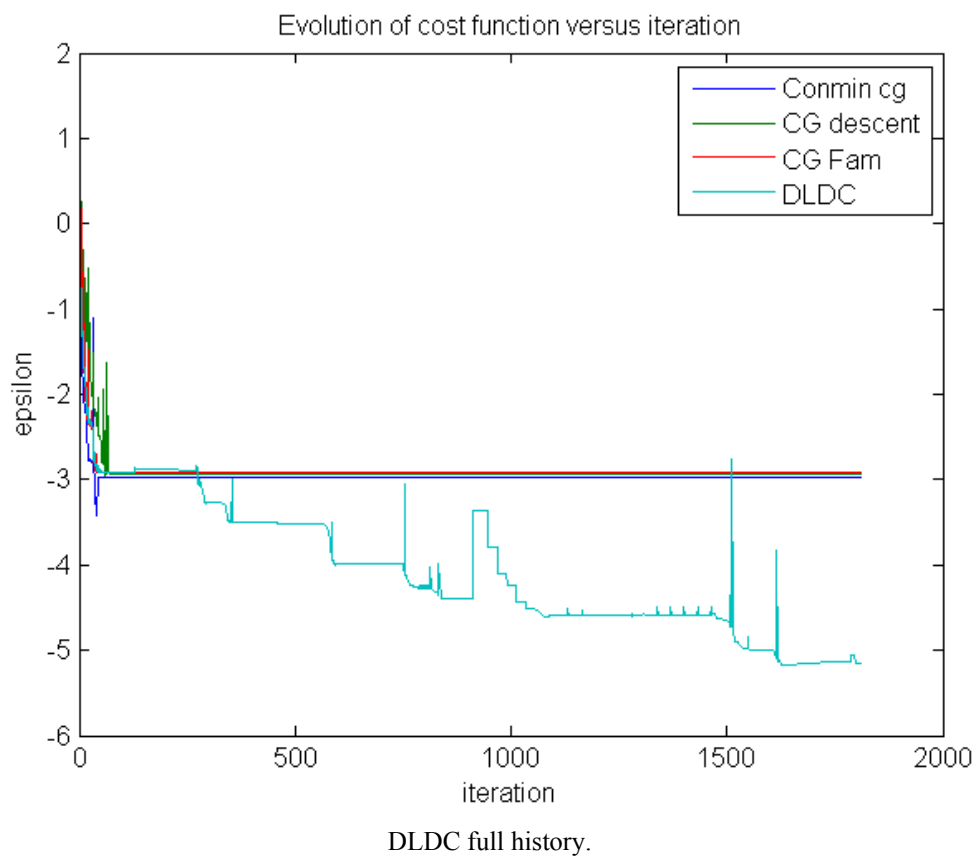
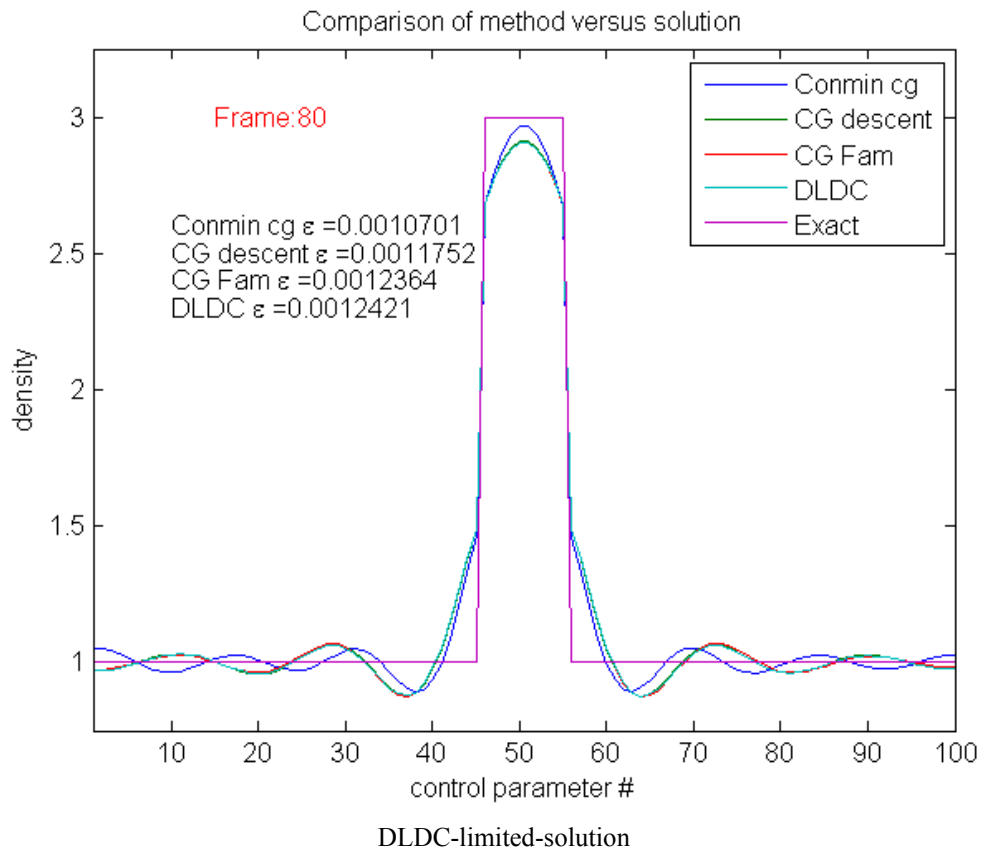
I'm attaching four images showing results of running DLDC. During the first 80 iterations (which are actually function/gradient evaluations) DLDC is quite competitive with Conmin and CG fam. This is shown in dldc-limited-solution and dldc-limited-history. However, DLDC continues to run for over 1800 function evaluations, reaching an amazing $6.9113e-006$ for the cost function, shown in dldc-full-olution and dldc-full-history. I'm not sure why DLDC continues to run for so long. I've tried changing some basic parameters such as stopping est and tolerances but the situation remains basically the same. Note that DLDC self-reports a much lower level of "iterations" but apparently each iteration uses several function / gradient evaluations. I would want to ask Professor Andrei if it makes sense to break up the function and gradient evaluation code for better performance.

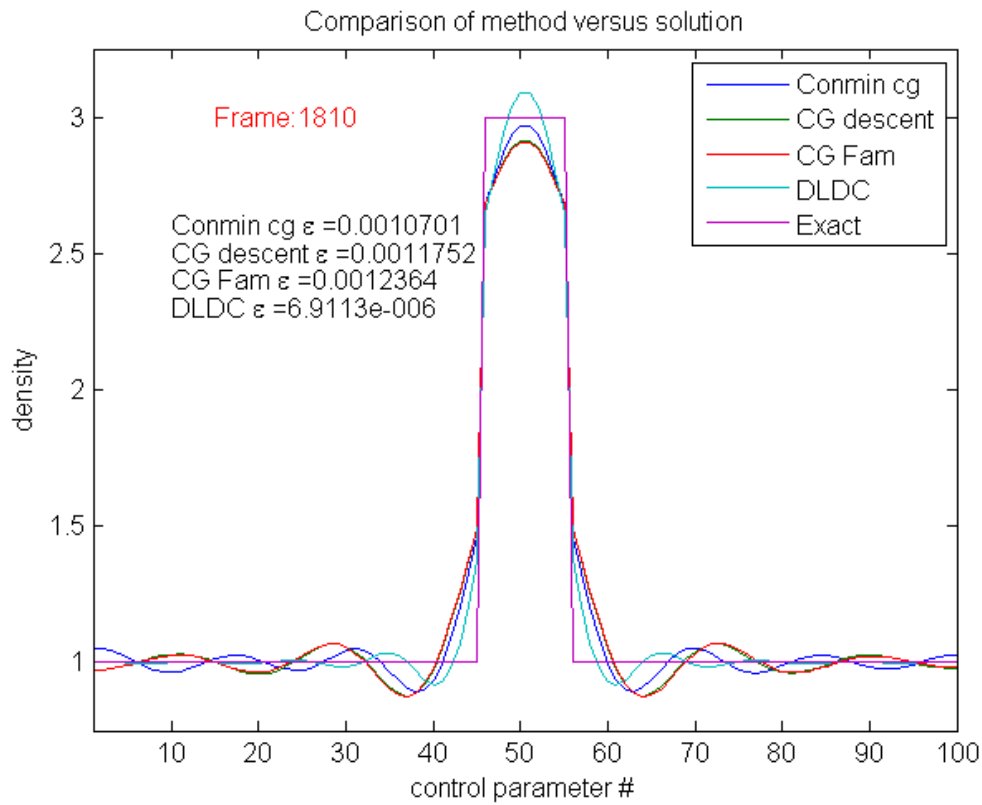
I have a jury duty summons tomorrow. If I am dismissed I will stop by to discuss these results tomorrow.

Best wishes,

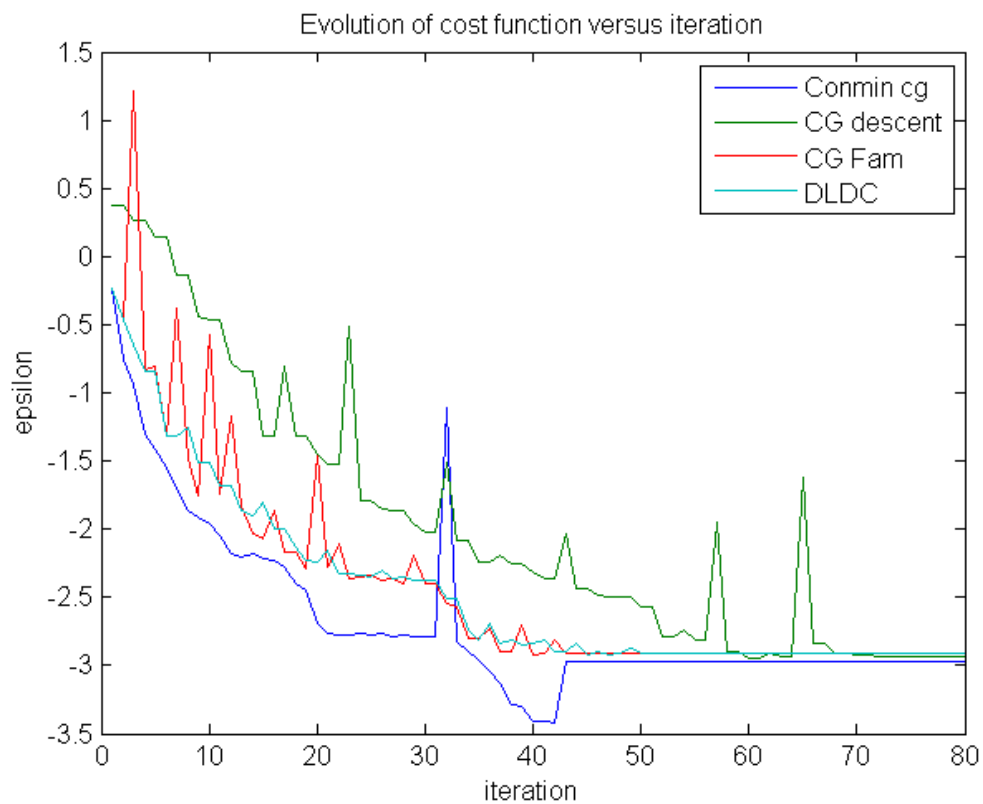
Jeff

Prof. I. Michael Navon
Program Director and Professor
Department of Scientific Computing,
Dirac Science Library Building, Room 483
Florida State University
Tallahassee, FL 32306-4120
Office: (850) 644-6560
Fax: (850) 644-0098
<http://www.scs.fsu.edu/~navon/>
<http://www.researcherid.com/rid/A-5173-2008>





DLDC full solution.



DLDC limited history.

Compiled by Neculai Andrei
 September 29, 2009