

Novel Hybrid Problems in C, Java & Matlab for CEC'05 SS on Real-Parameter Optimization

Dear Evolutionary Computation Researcher,

Special Session on Real-Parameter Optimization at CEC'05, Edinburgh, UK,
2 - 5 Sept. 2005

Since the first call in early December 2004, we have been working on a set of benchmark problems, evaluation criteria, associated codes in Matlab, Java & C over the last 3 months.

We believe that the introduction of hybrid functions, identification of several comparison pairs, specifications of evaluation criteria and specifications of shifts and rotation matrices, etc. are useful steps in the right direction. All these are available for downloading from

<http://staffx.webstore.ntu.edu.sg/MySite/Public.aspx?accountname=epnsugan>

The files are:

1. Summary20-Jan-05.pdf briefly presents the early feedbacks received in response to the CFP found in w-shop-cfp-dec-04.pdf
2. Intro-2-funs-09-Mar-05.pdf defines all the 25 chosen benchmark functions, rotation matrices, comparison pairs, etc.
3. Evaluation-criteria-10-Mar-05.pdf recommends how to collect and report results. You are free to report results in different formats (which show the strength of your algorithm) in addition to the results in the desired formats.
4. Matlab files were the 1st source files created by Jane Jing Liang (liangjing@pmail.ntu.edu.sg) and available in 4 folders as Matlab-files & ASCII-files.
5. The translation to Java was done by Ying-ping Chen (ypchen@csie.nctu.edu.tw). The Java code translation test results are in 00-tests and the codes are in Java-ypchen-050309
6. The translation to C was done by Santosh Tiwari (tiwaris@iitk.ac.in). The C codes are available in C-src-14-Mar-05.
7. Additional pseudo-real problems and associated details are available from Professor Darrell Whitley. whitley@CS.ColoState.EDU
<http://www.cs.colostate.edu/~genitor/functions.html>

If you identify any errors in any of these documents/codes, please kindly inform me.

We thank the following researchers for their contributions. We will very soon revise the pdf documents to include the acknowledgments formally in the documents.

Nikolaus Hansen & Anne Auger: Significant help in the development of the

pdf files and Matlab codes

Jane Jing Liang: worked on all pdf documents, and developed the Matlab codes.

Marc Schoenauer: Weiserstrass fractal function, noise in variables/fitness.

William Hart: optimum on the bounds to somewhat mimic constraint problems, volunteered to convert the codes to AMPL.

Hans-Paul Schwefel: Fletcher-Powell function, weblink to his book chapter.

Maurice Clerc: the need to account for the number of FES needed to fine tune parameters, time complexity computation,

Vitaliy Feoktistov: Volunteered to perform Matlab to Visual Studio.Net code conversion

Ying-ping Chen: Performed Matlab to Java code conversion.

Ballester Arístin, Pedro: narrow basin of attraction for global optimum.

Bogdan Filipic: continuous vs discrete problems

Santosh Tiwari: Performed the Matlab to C conversion.

Darrell Whitley: contributed pseudo-real problem and expanded problems.

Please prepare the papers according to the guidelines at the CEC'05 web pages and submit the papers at the submission web pages. The submission deadline is ~ 14th of April, 2005. Please kindly inform us the details of your submission so that we can ensure that they'd be included in the special session.

We look forward to receiving your submissions.

With best wishes

Session Organizers