

swMATH: Information Service for Mathematical Software

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About swMATH

swMATH is an open access database about mathematical software. It contains information on more than 18.000 software packages with almost 140.000 references to articles citing the software (06/2017). The unique and novel feature besides its scope is the publication-based approach: Articles that are represented in zbMATH are used to identify software and to generate information about it. This is mainly done automatically.

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YALMIP Referenced in 378 articles [sw04595]

programming, semidefinite programming, non-convex semidefinite programming, mixed integer programming, multi-parametric programming, geometric programming...

MIPLIB Referenced in 195 articles [sw04067]

mixed integer (linear) program (mip) is an optimization problem in which a linear objective function ... integer valued variables. For details on mixed integer programming, see, e.g., [89,106]. The miplib...

SCIP Referenced in 168 articles [sw01091]

fastest non-commercial solvers for mixed integer programming (MIP) and mixed integer nonlinear programming (MINLP)...

Bonmin Referenced in 89 articles [sw04796]

algorithmic framework for convex mixed integer nonlinear programs. This paper is motivated by the fact ... that mixed integer nonlinear programming is an important and difficult area for which there ... both fundamental building blocks, namely mixed integer linear programming and nonlinear programming, have seen considerable ... previous work in mixed integer nonlinear programming. This work represents the first step...

CVX Referenced in 203 articles [sw04594]

version 2.0, CVX also solves mixed integer disciplined convex programs (MIDCPs) as well, with...

MIPLIB2003 Referenced in 83 articles [sw07675]

researchers for access to real-world mixed integer programs a group of researchers Robert ... available library of both pure and mixed integer programs. This was updated ... used to compare the performance of mixed integer optimizers. Its availability has provided an important...

Software

SCIP

SCIP is currently one of the fastest non-commercial solvers for mixed integer programming (MIP) and mixed integer nonlinear programming (MINLP). It is also a framework for constraint integer programming and branch-and-price. It allows for total control of the solution process and the access of detailed information down to the guts of the solver. SCIP is part of the SCIP Optimization Suite, which also contains the LP solver SoPlex, the modeling language ZIMPL, the parallelization framework UG and the generic column generation solver GCG.

This software is also peer reviewed by journal MPC.

URL: scip.zib.de/

Authors: Gerald Gamrath, Ambros Gleixner, Gregor Hendel, Stephen J. Maher, Matthias Mutenberger, Benjamin Miller, Marc Pfetsch, Felipe Serrano, Dieter Wotinger, Jakob Witzig

Platforms: Linux, Windows, Mac OS

License: ZIB academic license

Current version: 3.2

Dependencies: LP-solver, e.g. SoPlex, CPLEX, Xpress ...

Add information on this software.

Related software:

CPLEX, MIPLIB, MIPLIB2003

Benchmarks for Optimization...

SoPlex, Global optimization

FEASPLMP, MINLP, LINDO

UNDOGlobal, Concorde

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Keywords for this software



References in zbMATH (referenced in 168 articles, 4 standard articles)

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- Braun, Gábor; Pokutta, Sebastian: A polyhedral characterization of border bases (2016)
- Johnston, Matthew D.; Panesa, Cassian; Donati, Pete: A computational approach to persistence, permanence, and endotoxicity of biochemical reaction systems (2016)

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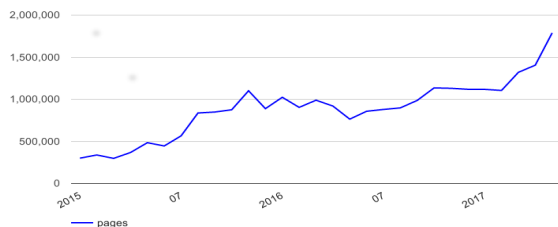
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05 Combinatorics

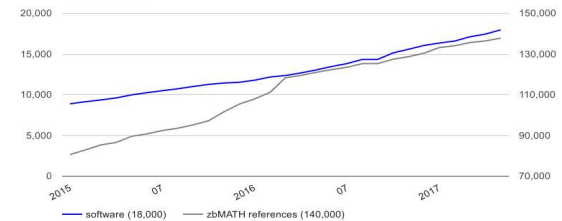
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