

The JuMP-dev 2025 Hackathon

Building 201, Room 326 at 10 Symonds street, from 10am to 3pm

Topics

Please list any topics you want to discuss here.

What to do about Manopt: <https://github.com/JuliaManifolds/Manopt.jl/pull/532>

- If there are simple manifolds with algebraic structures, yes. If things require ManifoldDiff or user-defined operators (e.g., for the distance), the answer is no.
- Don't try to implement things. Ask Benoit, he will say yes or no, and if yes, he can implement.
- Alternatively, delete the extension, and Benoit can create his own package.
- Oscar, Benoît

~~Ipopt callback definitions~~ <https://github.com/jump-dev/Ipopt.jl/pull/514>

- ~~• Oscar, Alexis~~

Distributing HiGHS on Python, and Alexis' METIS fork

- Conclusion is that they should vendor METIS
 - Change the names so we don't conflict with anyone else libmetis.org and the suffixes so it doesn't conflict with anything else bringing the symbols in
- Oscar, Ivet, Alexis

Nonlinear subexpressions in JuMP and MOI

- Oscar,

JuliaC: can we support JuMP + HiGHS + Ipopt? <https://github.com/JuliaLang/JuliaC.jl>

- Really asking for docs, PackageCompiler, and maybe JuliaC. A tutorial, and a CI script to check that we don't break things going forward.
- Make it a separate repo, and then add that to the existing solver-tests and extension-tests
- Oscar, ...

Complementarity in NL files: <https://github.com/jump-dev/MathOptInterface.jl/issues/2879>

- Marcos from AMPL sent me some examples, because the PDF is not helpful
- Oscar

Gurobi 13 updates

- Oscar

Hessian sparsity detection

- Add more tests to the PR
- Miles, Alexis

Coloring improvements

- Someone (Benoît+Claude; Miles declines) will attempt to hook Alexis' [SparseMatrixColoring.jl](https://github.com/blegat/ArrayDiff.jl/pull/19) into the coloring part of MOI.Nonlinear.ReverseAD.
<https://github.com/blegat/ArrayDiff.jl/pull/19>
- Miles, Alexis

GNNs for MathOptAI

- Issues opened in [MathOptAI.jl](https://github.com/MOSSLab-MIT/pfdelta/tree/main/core/models) for future discussion
- Robby, Joshua
- E.g., the CANOS model for (O)PF:
https://proceedings.neurips.cc/paper_files/paper/2023/hash/8c8cd1b78cdae751265c88efc136e5bd-Abstract-Conference.html
- Formulation:
https://proceedings.neurips.cc/paper_files/paper/2023/hash/8c8cd1b78cdae751265c88efc136e5bd-Abstract-Conference.html
- OMLT: <https://github.com/cog-imperial/OMLT/pull/110>

Inefficient MOI wrapper for Clarabel

- <https://discourse.julialang.org/t/creating-efficient-moi-wrapper-for-different-cones-and-ordering-them-by-types/130031/3?u=yuwenchen95>
- Oscar

MINLP test set updates for JuMP

- <https://minlplib.org/index.html>
- Older version with .jl / JuMP syntax: <https://github.com/lanl-ansi/MINLPLib.jl>
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