

URBAN-PLUMBER Model Evaluation Project: initial results



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1 Project summary

Initial phase

- single suburban site
- 30 LSMs participating, 55 output variables
- 4 observed fluxes evaluated (SW, LW, Qh, Qle)

Rank models against benchmarks:

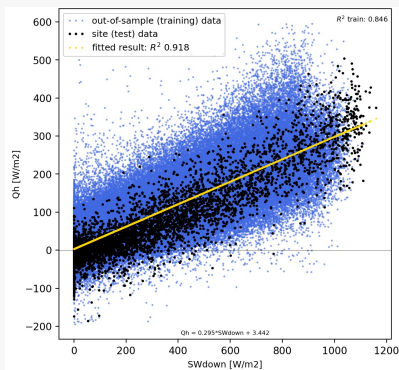
- 1, 2, 3 variable linear regressions
- Manabe bucket + 1-tile slab model

Which models beat benchmarks?

- simpler urban schemes tiled with complex veg. models
- mid-complexity schemes with integrated vegetation

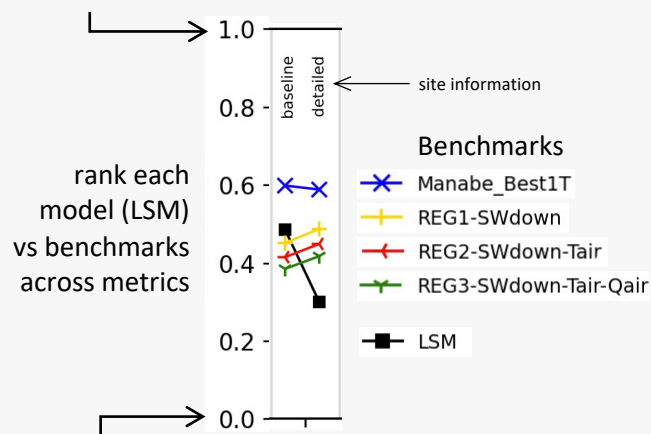
2 Benchmarking

Linear regression of Qh on SWdown



Metrics: MAE, MBE, SD, R, 5th & 95th % errors

All benchmarks better than LSM in all metrics

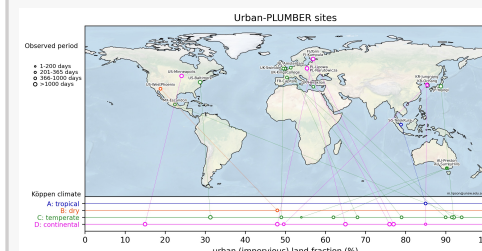


LSM better than all benchmarks in all metrics

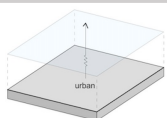
4 Next steps

Multi-site phase

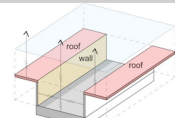
- 20 urban sites around world
- 50 years of observations
- built fractions 15-95%



3 Results



simpler models
less outputs possible



more complex models
more outputs possible

