CALVIN (Python Version)
Fall 2018 Shortcourse

Prepared by

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Date: October 5, 2018

Location: TBD

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Registration: https://goo.gl/forms/6nUVGddb8xhUOSVn1

Tentative Agenda and Topics

10.00 – 10:05 am	-	Introduction
10:05 – 10:30 am	-	Set-up required software
10:30 – 11:15 am	-	CALVIN Theory
11:15 – 12:00 pm	-	HOBBES overview and exporting network data
12:00 – 01:00 pm	**-**	**Lunch break**
01:00 – 01:15 pm		CALVIN Python version updates and Pyomo
01:15 – 02:15 pm	-	“Abstract model”: run and analyses
02:15 – 03:15 pm	-	“Concrete model”: run and analyses
03:15 – 03:30 pm	**-**	**Break**
03:30 – 04:30 pm	-	Postprocessing and analyzing results

Summary

This shortcourse is intended for those who are interested in California's water supply system and large-scale water optimization modeling. Mechanics of the CALVIN model will be covered. This crash course introduces open-source CALVIN version modeled in Python-based Pyomo environment, employing faster solvers and giving an opportunity for better representation of the system. It walks through steps for required software installation process for the CALVIN model, as well as creating a model run and postprocessing results.

Recommended readings

- **Original publication of CALVIN** (Draper et al., 2003):

Draper, A. J., Jenkins, M. W., Kirby, K. W., Lund, J. R., & Howitt, R. E. (2003). Economic-Engineering Optimization for California Water Management. *Journal of Water Resources Planning and Management*, *129*(3), 155–164. https://doi.org/10.1061/(ASCE)0733-9496(2003)129:3(155)

- **Open-source Python version of CALVIN** (Dogan et al., 2018):

Dogan, M. S., Fefer, M. A., Herman, J. D., Hart, Q. J., Merz, J. R., Medellín-Azuara, J., & Lund, J. R. (2018). An open-source Python implementation of California's hydroeconomic optimization model. *Environmental Modelling & Software*, *108*, 8–13. https://doi.org/10.1016/j.envsoft.2018.07.002