

A Brief Introduction to Mathematical Optimization in Julia

This talk will provide a brief introduction to Julia, a new programming language designed for scientific computation. Julia strives to combine the best features from C, Matlab and Python and greatly reduces the time required for implementing state-of-the-art numerical computing methods. Building on the Julia foundation, the talk will then introduce the fundamentals of mathematical programming for solving challenging nonlinear and discrete optimization problems. It will illustrate how such problems can be modeled in JuMP, a mathematical programming language build on top of Julia. Motivating examples will include power network optimization tasks, which are crucial to the daily operations of modern power networks.