

**Title: Sum-of-Squares optimization with JuMP in Julia**

**Speaker: Benoit Legat (UCLouvain)**

**Abstract:** In this tutorial, we show how to formulate and solve Sum-of-Squares programs using the SumOfSquares extension of the JuMP framework in Julia.

We start from the basics of how to create the polynomials, the JuMP model and interpret the results provided by the solver.

We then cover the different caveats and challenges that are crucial for both performance and numerical accuracy.

Finally, we survey in detail the different features of Sum-of-Squares that can help circumventing these issues such as using mutable arithmetic, choosing the right certificate, changing the polynomial basis, or exploiting sparsity and symmetry.