# Clarabel: A conic interior-point solver with quadratic objectives

**Yuwen Chen**

*Department of Engineering Science, University of Oxford*

Monday 19 February
1300hrs
LR7, IEB

**Abstract:**

Convex optimization finds applications in various fields, such as machine learning, signal processing, control systems, finance, logistics, and operations research, and relies on numerical software to solve problems efficiently. We are going to introduce our numerical solver called ***Clarabel***, which is based on an interior point method with homogeneous embedding. It supports a variety of conic constraints beyond linear programming (LP) and quadratic programming (QP), including second-order cones, semidefinite cones, exponential cones, and power cones. The solver was originally developed in Julia and Rust, but we also provide support for Python. It performs faster and more stable than state-of-the-art solvers on a class of conic optimization problems.