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The AURORA Financial Management System: Model and Parallel Implementation Design

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Abstract

The AURORA financial management system under development at the University of Vienna is a modular decision support tool for portfolio and asset–liability management. It is based on a multivariate Markovian birth-and-death factor model for the economic environment, a pricing model for the financial instruments and an objective function which is flexible enough to express risk aversion.

The core of the system is a large scale linear or convex program, which due to its size and structure is well suited for parallel optimization methods.

As the system is still at an early stage of development, the results are preliminary in nature. Only a few types of financial instruments are handled and just two types of objectives are considered. The parallel optimization modules are still in the development phase.

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