# Eigen: a C++ template library for linear algebra and related numerical algorithms.

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**Abstract**

In this talk I will present the open-source Eigen project from both a technical and management point of view.

On the first aspect, Eigen is a versatile C++ template library covering dense and sparse linear algebra in a generic and easy to use manner. High performance is obtained through an optimal use of vector instructions. All of this is possible thanks to an advanced use of expression templates that is at the core of Eigen. Eigen aims to fill the gap between MatLab-like tools and the C/Fortran specialized libraries coming from the HPC community. Eigen is especially appreciated by the graphics, vision, and robotics communities.

On the second aspect, I will show how developing Eigen as a pure open-source project with a fully open repository and open discussions was a key in the success of Eigen. I will also briefly discuss funding and organizational issues to make the project live a long life.