Dune: The Distributed and Unified Numerics Environment

Oliver Sander [1]

Dune is a framework for grid-based numerical computations. Its main feature is the introduction of an abstract interface which separates grid implementations from the algorithms that use them. Applications are written for the interface instead of for a specific grid implementation. Hence grid implementations can be changed at any moment in algorithm development with minimal effort. Several such implementations are available. Some of them are grids specifically written for Dune, others encapsulate existing well-known finite element codes such als Alberta and UG. Due to the use of modern programming techniques the extra abstraction layer comes at very little additional cost.

[1]FU Berlin, Germany,
sander@mi.fu-berlin.de