

AN OBJECT ORIENTED DESIGN FOR AN ISOGEOMETRIC SOFTWARE LIBRARY, INTRODUCING IGATOOLS

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We present a novel mathematically faithful object oriented design for a general purpose isogeometric library and introduce a high quality C++11 open source implementation of it, `igatools`.

`igatools` uses advanced programming techniques and supports dimension independent programming, and includes support for manifolds and isogeometric elements of the H-div and H-curl type.

The modularity of `igatools` lets the user to easily integrate the built-in capabilities with external libraries (e.g. CAD routines) if needed, and its generality allows to use `igatools` in order to implement IGA methods into existing FEM codes.

This talk will focus on the design decisions taken in the development of the library.