

## Talk announcement

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## Multipatch space and space time IgA

In the first part of the talk, discontinuous GAaerkin Isogeometric Analysis (dGIGA) scheme will be presented for solving elliptic problems on decompositions with overlapping regions. Usually in IgA framework, complex domains are defined as a union of patches, where every patch has its own geometrical parametrization. In particular cases, we can derive non-matching parametrizations for the patch interfaces. This can lead to the creation of overlapping regions between the patches. In this case, the whole error for solving the PDE problem can be split into three parts: (i) the first part is related to the approximation properties of the utilized B-spline (NURBS etc) space, (ii) the second part is related to the approximation of the normal axes on the faces of the overlapping region, (iii) the third part is related to the incorrect geometric representation of the patches. In this talk, we present a technique for studying the three error part separately. We will focus mainly on the estimation of the last error, which is carried out by considering it as non-consistency error. In the second part of the talk a space-time Isogeometric Analysis method will be presented for solving parabolic problems. We do not distinguish between space and time discretization and we apply discontinuous Galerkin Isogeometric Analysis methodology for discretizing the problem on both space and time. We will discuss error estimates for the case where the solution has different regularity properties in space and in time. The talk is based on the following works, (1) Isogeometric Analysis for parametrizations with overlapping regions, (2016) C. Hofer, U. Langer, I. Touloupoulos (under preparation) (2) Time Discontinuous Galerkin Space-Time Isogeometric Analysis of Parabolic Problems, (2016) C. Hofer, U. Langer, I. Touloupoulos (under preparation).