

UNIVERSITY OF CRETE
DEPARTMENTS OF MATHEMATICS AND APPLIED MATHEMATICS

COMPUTATIONAL MATHEMATICS SEMINAR

10:00am, Friday, 29 September, 2017
Room A-303

Ioannis Touloupoulos, *Johann Radon Institute for Computational and Applied Mathematics*

Space-Time methods for parabolic evolution problems

In this talk, we will present a space-time finite element method, and a new time-multipatch discontinuous Galerkin Isogeometric Analysis technology for solving parabolic initial-boundary problems. We prove coercivity of the discrete problems with respect to a suitably chosen norm that together with boundedness, consistency and approximation results yields a priori discretization error estimates in this norm. Furthermore, we will discuss efficient parallel multigrid solution technologies for solving the resulting algebraic system. At the end, numerical examples will be shown that confirm the theoretical results.