Stabilized finite element method for parabolic problems

Ioannis Toulopoulos
Johann Radon Institute for Computational and Applied Mathematics,
(RICAM), Austrian Academy of Sciences
`ioannis.toulopoulos@oeaw.ac.at`

In this talk we will present a space-time finite element method, stabilized by means of bubble functions, for solving linear parabolic evolution problems of the form $\partial_t u - \kappa \Delta u = f$. We will present an a priori error analysis, and optimal order error bounds will be discussed. At the end, numerical results will be shown that confirm the theoretical results.
This talk is based on the work [1]. We gratefully acknowledge the financial support of this research work by the Austrian Science Fund (FWF) under the grant NFN S117-03.

References

[1] I. Toulopoulos, *Bubble Stabilized finite element method for parabolic problems*, 2017, under review, preprint available as Report No. 2017-19, at https://www.ricam.oeaw.ac.at/publications/ricam-reports/