

## NUMERICAL ANALYSIS ASPECTS OF STABILIZED METHODS

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**Key words:** Stabilized Methods, Numerical Analysis.

### ABSTRACT

It is well known that standard discretizations of many problems appearing in applications often suffer from severe instabilities. Typical examples are problems with dominant convection or incompressible flow problems discretized using equal order finite element spaces, see, e.g., [1]. The instabilities appear in form of spurious oscillations that often make the approximate solution completely worthless. A remedy is to modify the standard discretization in a suitable way, which is usually referred to as stabilization.

The field of stabilized methods is very broad and a huge amount of stabilized methods have been proposed during the past decades. Nevertheless, in many cases, the theoretical understanding of stabilized methods is not sufficient and/or the quality of the resulting approximate solutions is not satisfactory. The aim of this minisymposium is to bring together researchers who are interested in the numerical analysis of stabilized methods. Their contributions should provide a deeper insight into the properties of stabilized methods developed earlier or to present new stabilized methods supported by relevant theoretical results.

### REFERENCES

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- [2] T. Chacón Rebollo, “An analysis technique for stabilized finite element solution of incompressible flows”, *ESAIM: M2AN*, Vol. 35, pp. 57-89, (2001).