INDUSTRIAL APPLICATIONS OF IGA

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ABSTRACT

We celebrate in 2025 a 20-year anniversary of the paper [1] that first introduced Isogeometric Analysis (IgA). Two decades later, the industrial uptake of IgA is in progress, however, the progress is slower than first anticipated. This may be explained in part by the technological challenges involved. For example, IgA requires watertight geometries making seamless integration with b-rep CAD models complex; CAD models are seldom watertight; Gaining a deep understanding of splines takes more time in addition to grasping the intricacies of FEM. There are also aspects related to the relative sizes of the different communities involved in the IgA R&D and the availability of software tools. While the CAD market is larger than that of CAE, the community of spline researchers is much smaller than that of FEM. There is limited access to software libraries that can be licenced commercially. There are some IgA success stories, but we need more of them.

The minisymposium will:

• Address the challenges facing industrial use of IgA

• Address how the IgA community supports new industrial use of IgA.

• Provide success stories of industrial use of IgA

We invite contributions both from academia, applied research and industry to submit abstracts to this minisymposium to help facilitate a wider use of IgA in industry.

REFERENCES (Not mandatory, maximum 2 references)

[1] T. J. R. Hughes, J. A. Cottrell and Y. Bazilevs: *Isogeometric analysis: CAD, finite elements, NURBS, exact geometry and mesh refinement,* Computer Methods in Applied Mechanics and Engineering, 194 (2005) 4135-4195.

[2]

Instructions:

Organizers of Minisymposium (MS) proposals are requested to send an abstract of approximately 300 words (1 page) no later than **September 2nd, 2024**, following the format of this template.

The abstract should briefly illustrate the contents and objectives of the session as well as the IS Topics. The list of prospective speakers is not required.

For practical reasons, each IS shall have a Corresponding Organizer, who will submit the IS proposal and keep in contact with the Conference Secretariat, and one or more Co-organizers if this is the case.

For any further request, please contact the Conference Secretariat: iga@cimne.upc.edu