



ADVANCES IN GEOMETRY INDEPENDENT APPROXIMATIONS

Cosmin Anitescu ¹, Elena Atroshchenko ², Stéphane Bordas ^{3*},

Chensen Ding ³, Chintan Jansari ⁴, Haojie Lian ³

Sundararajan Natarajan ⁵, Camilo Suarez ³ and Satyendra Tomar ^{3,6}

and Javier Videla ²

1: Bauhaus Universität, Weimar

2: University of New South Wales, Sydney, Australia

3: University of Luxembourg, Department of Computational Engineering Sciences

4: IIT Madras, India and University of Luxembourg, Department of Computational Engineering Sciences

5: Department of Mechanical Engineering, IIT Madras, India

6: Centre for Information Technologies and Applied Mathematics,
University of Nova Gorica, Slovenia

*: e-mail: stephane.bordas@uni.lu web: <http://legato-team.eu/people/>

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Abstract *We present recent advances in geometry independent field approximations. The GIFT approach is a generalisation of isogeometric analysis where the approximation used to describe the field variables no-longer has to be identical to the approximation used to describe the geometry of the domain.*

As such, the geometry can be described using usual CAD representations, e.g. NURBS, which are the most common in the CAD area, whilst local refinement and meshes approximations can be used to describe the field variables, enabling local adaptivity.

We show in which cases the approach passes the patch test and present applications to various mechanics, fracture and multi-physics problems.

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