

PLASTICITY AND FRACTURE OF MATERIALS AND JOINTS IN LARGE-SCALE ANALYSES

DAVID MORIN^{*}, AND BERTRAND LANGRAND[†]

^{*} Department of Structural Engineering
NTNU
Trondheim, Norway
david.morin@ntnu.no

[†] Department of Materials and Structures
ONERA
Lille, France
bertrand.langrand@onera.fr

ABSTRACT

Analyses at large scales are crucial tools to design structures across various industries. To achieve the best results, these simulations must accurately represent the mechanical behavior of both the materials and the structural joints. Understanding phenomena like plasticity and fracture in materials and joints is essential, even when working with large Finite Element models, and furthermore, appropriate modelling techniques are inevitable. In this context, this mini symposium wishes to highlight recent progresses in the modeling of materials and joints for large-scale analyses, with an emphasis on plasticity and fracture. We invite contributions that explore computational approaches as well as combined experimental and numerical methods. We are particularly interested in materials used in the different transportation sectors, including aerospace, automotive, naval and railway industries. Additionally, papers on various joining technologies, such as mechanical fasteners, welding, and adhesive bonding, are also welcome. Besides the scientific presentations, this mini symposium aims at gathering the European and international communities working on these topics to foster future collaborations.