

Seminar series of the Graduate School GRK 2078

Referee: **Philip Cardiff, Associate Professor**
School of Mechanical and Material Engineering, University College Dublin

Dates: Tuesday, January 31, 2023

Time: 2:00-3:00pm

Location: Online

Title: **An overview of the finite volume method for solid mechanics and fluid-solid interaction**

Abstract

Since early publications in the late 1980s and early 1990s, the finite volume method has been shown suitable for solid mechanics analyses. There are several flavours of the method, which can be classified in various ways, such as by grid arrangement (cell-centred vs staggered vs vertex-centred), solution algorithm (implicit vs. explicit), or discretisation stabilisation strategy. This seminar gives an overview of the field, where details of the discretisations and solution algorithms are discussed. Similarities and differences with the finite element method are also outlined. Finally, details of available implementations in the software OpenFOAM are discussed, with a particular emphasis on the solids4foam toolbox.

You are cordially invited to take part in the online-event.

Prof. Dr.-Ing. Thomas Böhlke
(Spokesperson of the GRK 2078)