The extended finite element method for evolving interfaces

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Moving interfaces are frequently found in the real world and are relevant in many engineering applications. Examples are crack propagation, the movement of interfaces between two fluids, fluid-structure interaction, and phase interfaces in solidification problems. The extended finite element method (XFEM) is particularly useful in these applications as it enables the approximation of discontinuities within elements with optimal accuracy. Thereby, a time-consuming generation and maintenance of meshes which align with the interfaces can be avoided. This minisymposium is supposed to give an overview of current research activities in the field of the XFEM for evolving interfaces with applications in crack propagation, two-phase flows, fluid-structure interaction and others.