COHESIVE ZONE MODELLING USING T-SPLINES

Stefan May\textsuperscript{1*}, Julien Vignollet\textsuperscript{2} and René de Borst\textsuperscript{3}

\textsuperscript{1} School of Engineering, University of Glasgow, Oakfield Avenue, Rankine Building, Glasgow G12 8LT, s.may.2@research.gla.ac.uk
\textsuperscript{2} School of Engineering, University of Glasgow, Oakfield Avenue, Rankine Building, Glasgow G12 8LT, Julien.Vignollet@glasgow.ac.uk
\textsuperscript{3} School of Engineering, University of Glasgow, Oakfield Avenue, Rankine Building, Glasgow G12 8LT, Rene.DeBorst@glasgow.ac.uk

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In this contribution, a new method is presented to determine whether a T-spline mesh is analysis-suitable or not. Furthermore, we investigate the propagation of cracks using a cohesive zone model, while discontinuities are introduced using T-splines. NURBS and T-splines provide the opportunity to add a discontinuity by knot insertion. For a single NURBS patch, knot insertion can only be performed globally due to the tensor product structure – i.e. an interface for the patch is introduced. In contrast, T-splines allow the insertion of knots locally. As such, T-splines allow the modelling of propagating cracks \cite{1}.

Since for most materials, failure takes place in a process zone around the crack tip, we will focus on cohesive zone models in this contribution.

REFERENCES