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4TH KEYNOTE LECTURE : 9:15 AM – 9:55 AM JUNE 8, 2016

The Thick Level Set (TLS) damage model for quasi-brittle fracture : state of the art

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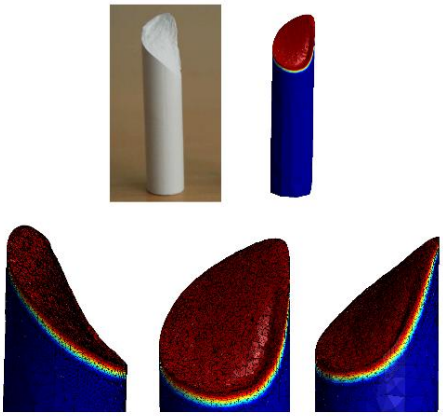
ABSTRACT

The TLS model was designed to allow for a smooth transition to fracture. It belongs to the family of the non-local damage models and thus introduces a length. The orginality in the TLS is that it incorporates a geometrical aspect : the shape of the localization zone is located by a level set.
So far, most of the efforts have been concentrated to quasi-brittle fracture. After restating the motivations for the new model, we review the results obtained in these past 5 years. The following issues will be addressed :

- Capability of the model to reproduce properly size effects in concrete cracking.
- Predictive capabilities for crack onsets at notches.
- Capability of the model to take into account concurrent local and non-local developments of damage.
- Comparison with other non-local damage models
- Relationships with the cohesive zone model

Finally, a set of open issues will be detailed.



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