**Mini-Symposium announcement:**
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# CONSTRAINT AND FRACTURE TOUGHNESS

Organized by:
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Mechanical properties are not intrinsic to material but depend on geometrical factors such as the specimen geometry, thickness, surface roughness and length, defect geometry such as the relative length, radius, or opening angle, loading mode. Material properties available from data banks are therefore to be considered as reference material properties, as results from standard tests. To use these reference properties for a structure and component which differ in terms of geometry and loading mode, a correction needs to be made, which is called transferability.
For fractures emanating from a defect where fracture mechanics can be applied, the transferability is treated with the concept of stress constraint or the relative stress gradient. The stress distribution obtained in a reference situation (generally small scale yielding) with another general one, is modified in two ways: there is a shift of the stress distribution and a small rotation. These modifications of the stress distribution are considered as a measure of constraint. In the literature, we can note the following constraint parameters: the plastic constraint factor L, the stress triaxiality β, the Q parameter, T stress, $A_2$, $A_p$ and $A_\phi$.

Papers can be submitted to this mini-symposium on all aspects of constraint in fracture mechanics. The topics of interest are including (but not limited to):

1. **Choice of the constraint parameters:** How to choose it according to the failure mechanisms (brittle, elasto plastic and plastic collapse.
2. **Method to determine the constraint parameters:** Experimental methods, Finite element method, definition of the effective constraint;
3. **Relationship between fracture toughness and constraint:** Liner relationship or parabolic, asymptotic values for very high and very low constraint.
4. **Relationship between transition temperature and constraint:** Relationship between transition temperature and stress triaxiality β, Q parameter, T stress, $A_2$.
5. **In plane and out of plane constraint:** Possibility of a unique parameter to describe in-plane and out of plane constraint.
6. **Application:** Modified Failure Assessment diagram, modified resistance to crack extension to constraint, crack paths.

Please send by email the tentative title of your presentation together with the name, affiliation and email address of the corresponding author and the names of co-authors before 19th of September 2016 to one the organizers:

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