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Strain localization analysis using a large strain self-consistent approach

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Gérald Franz, Farid Abed-Meraim, Tarak Ben Zineb, Xavier Lemoine, Marcel Berveiller. Strain localization analysis using a large strain self-consistent approach. Shear 07, International Symposium on Shear Behavior and Mechanisms in Materials Plasticity, Sep 2007, Nancy, France. 2007. hal-01232410

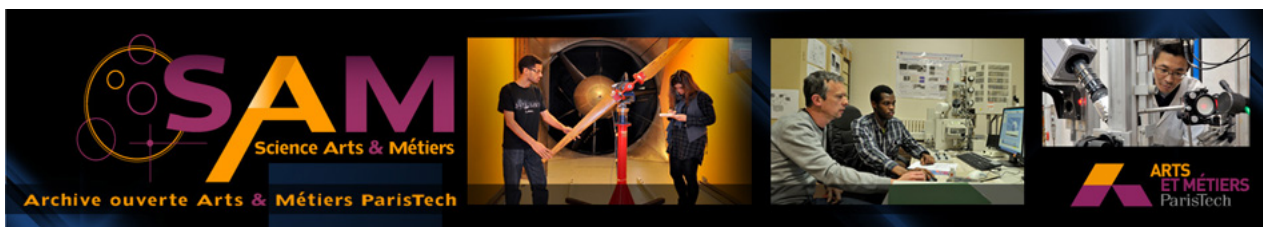
HAL Id: hal-01232410

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Submitted on 21 Mar 2016

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Gérald FRANZ, Farid ABED-MERAIM, Tarak BEN ZINEB, Xavier LEMOINE, Marcel BERVEILLER - Strain localization analysis using a large strain self-consistent approach - 2007

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STRAIN LOCALIZATION ANALYSIS USING A LARGE STRAIN SELF-CONSISTENT APPROACH

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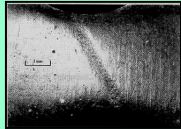
Context of the study

Mechanisms of ductility loss

Plastic mechanisms of ductility loss

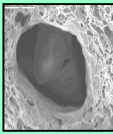


Structural origin: wrinkling, buckling

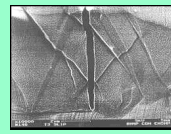


Material origin: localization, necking

Damage mechanisms of ductility loss



Cavities



Failure

Forming Limit Diagram (FLD)

- Forming limit of sheet metal = state at which a localized strain initiates during forming
- Ductility loss characterization using Forming Limit Diagram (FLD) developed first by Keeler (1963) and Goodwin (1968).
- Path-dependent representation

Metallurgy impact (texture, grain size, ...)

