סמינר - SEMINAR

הנך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ב׳ 4.05.15 (טו׳ באייר, תשע״ה), בבניין דן-קאהן, קומה 0, אודיטוריום 1, שעה 14:30.

ירצה:

Professor J.A. Rodríguez-Martínez

Department of Continuum Mechanics and Structural Analysis. University Carlos III of Madrid. Avda. de la Universidad, 30. 28911 Leganés, Madrid, Spain
Laboratoire d'Etudes des Microstructures et de Mécanique des Matériaux LEM3, UMR CNRS 7239, Université de Lorraine, Ile du Saulcy, 57045 Metz cedex 1, France

על הנושא:

Collective behaviour and spacing of necks in ductile plates subjected to dynamic biaxial loading

להלן תקציר ההרצאה:

Diffuse or localized dynamic necking of a sheet metal is a major issue in high speed forming processes, leading to unacceptable thinning and even failure if fully developed, or in the dynamic behaviour of metallic structural elements of small thickness used for energy absorption purposes. This process is frequently related to the collective development of localization bands resulting in a necking pattern which depends on the sheet properties and on the loading conditions. This work investigates the spacing between necking bands in sheets made of a thermoviscoplastic metal and submitted to dynamic biaxial loading. For that task a linear perturbation technique, derived within a quasi-2D framework, has been developed. Using this methodology, which specifically accounts for stress triaxiality effects upon strain localization, a dominant instability mode can be identified, whose wavelength is related to the necking-band spacing. Likewise, fully 3D finite element simulations have been performed aiming to systematically verify and complement the outcomes of the aforementioned theoretical approach. The effects of material properties (strain rate sensitivity, material density), sheet geometry (thickness), loading conditions (loading rate and loading path), and thermal coupling on the stability of the deformation process and on the distance between necking bands are examined and discussed.

המארח : פרופ׳ דניאל ריטל

בברכה,

פרופ'/נ אאיר סן
מרכז הסמינרים