

Title: Recent advances in the experimental thermos-mechanics of elastomers. How to deal with large deformations?

Jean Benoit Le Cam : jean-benoit.lecam@univ-rennes.fr

Elastomers present a number of difficulties when it comes to characterizing their thermo-mechanical response whether under homogeneous or heterogeneous loadings. The large deformations complicate the analysis formalism both mechanically and thermally. The aim of this conference is to present the experimental problems involved in characterizing the behavior of elastomers, using examples from experiments carried out at the Rennes Institute of Physics (France). We will examine the problems associated with instrumentation, the properties of the elastomer considered itself, the large deformation formalism for dealing with the calorimetric response under deformation, and energy balances.