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STRAIN AND STRESS DISTRIBUTION OF BULK METALLIC GLASSES AT HIGH STRAIN RATE

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Abstract. For the case of bulk metallic glasses at large strains and high rate of deformation, it is necessary to define appropriate constitutive parameters in order to obtain reliable results from the simulations. In this paper, that is an extension of previous work of the authors (F. Ardiani et. al, *Mec. Comp.* 31(9): 1437-1449 (2012)) global and local numerical results of the mechanical response of both binary and ternary alloys of bulk metallic glass are analyzed and discussed. To this end, numerical experiments are performed at high strain rate. Furthermore, different constitutive parameters of both alloys are analyzed in order to study their mechanical response. In particular, effective stress evolution as well as distributions of strain and stress components, pressure and deviatoric stresses are discussed at the loading stages showing large plastic strains.