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NUMERICAL STUDY OF THE EVOLUTION OF VOIDS AND VORONOI POLYHEDRA ON BULK METALLIC GLASSES

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Abstract. Bulk metallic glasses are increasingly used in structural or mechanical components due to their particular properties, such as high mechanical strength and moldability, allowing their application at both nano and macro scale components. However, many aspects of their mechanical properties are still unknown, particularly in the range of finite strains and high strain rates, limiting their use in many engineering applications.

In this paper, a numerical study of bulk metallic glasses is carried out at the nanoscale for large elastoplastic strains and high strain rates. In particular, the evolution of voids and Voronoi polyhedra with strain is studied for a large temperature range, reaching the glass transition temperature.

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