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Understanding short range order in bulk metallic glasses: Resolving local atomic structure in amorphous copper zirconium through statistically based 3D visualizations AL RAHEMTULLA, Univ of Guelph, ADAM HINKLE, Karlsruher Institut fr Technologie, BRUNO TOMBERLI, Capilano University, MICHAEL FALK, Johns Hopkins University, STEFAN KYCIA, Univ of Guelph — Understanding the underlying local structure of metallic glasses has been a recent endeavor, incorporating a variety of computational methods such as, reverse monte carlo, molecular dynamics and ab-initio modeling. Interpreting similarities and differences between results is a great challenge. We dissect the underlying structures of 300k atom CuZr models, employing 3D statistical density maps through our recently established Local Atomic Motif (LAM) method. The use of LAMs revealed bimodal structures in amorphous germanium. It has since been expanded to handle more complex systems. An overview of the capabilities of the LAM method will be presented as well as a the resulting detailed description of the local order in metallic CuZr.

Al Rahemtulla
Univ of Guelph

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