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Specific Heat Anomalies in Glassy Fluids Due to Cluster Micro-Melting GEORGE HENTSCHEL, Emory University, VALERY ILYIN, ITAMAR PROCACCIA, NURITH SCHUPPER, Weizmann Institute of Science — We will discuss the specific heat anomalies observed in new simulations of equimolar mixtures of particles interacting via soft core repulsive potentials under external pressure that are known to show glassy dynamics at low temperatures. The simulations show both long-lived states of microcrystalline clusters that do not nucleate a crystalline ground state and also the appearance of two specific heat peaks which were not observable in earlier simulations. We argue that the appearance of two peaks is due to the micro-melting of two types of clusters and discuss the form of the resulting specific heat anomalies. Our arguments suggest that the glass transition will typically show non universal features.

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