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Finite-temperature solid phases and melting of denser lithium<sup>1</sup> SABRI ELATRESH, Department of Physics, Dalhousie University, Halifax, NS, B3H 3J5, Canada, STANIMIR BONEV, Department of Physics, Dalhousie University, Halifax, NS, B3H 3J5, Canada; Lawrence Livermore National Laboratory, Livermore, California 94550 — There has been a lot of recent interest in lithium at high pressure, in particular, in relation to deviations from simple metallic behavior, non-intuitive structural changes, and its anomalous melting curve. Most of the theoretical studies have been limited to 0 K static lattices and liquid properties with classical ions. In this talk, we will present results for the stability of lithium up to 250 GPa and finite temperature, as well as its melting curve. Comparison with experimental measurements and the significance of quantum ion dynamics for the observed properties will be discussed.

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