

Abstract Submitted  
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**On the influence of nanobubbles on the evaporation inception in liquids** DANIEL FUSTER, CNRS (UMR 7190), Universite Pierre et Marie Curie. Institut Jean le Rond d'Alembert , France, KIM PHAM, Eindhoven University of Technology Mechanical Engineering Materials Technology — We present a new approach for the calculation of the evaporation inception point in liquids. Using the derivative of the system's energy with respect to the void fraction as a stability criterion for the whole system, we consider that sudden evaporation only occurs when the bubble expansion is energetically favourable. The results obtained are shown to be equivalent to the Blake radius for a single spherical bubbles under tension. This method is proven to provide reasonable results also for superheated water. The method also allows gaining new insight into complex systems where nanobubbles stick to the walls. We provide new clues about future experimental measurements that should shed light into the process of bubble nucleation.

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