Finite Size Scaling of Melting in Two Dimensions KEOLA WIER-
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partment, University of Athens, Greece — We study the melting transition of a
two-dimensional Lennard-Jones fluid using classical Monte Carlo simulation tech-
niques. We perform a finite-size scaling analysis within the context of the KTHNY
theory of melting, which expects melting to occur via a two-stage process, with sep-
arate transitions for translational and orientational order. Careful attention is paid
to the fact that there are two order parameters, and the behavior of their correlation
lengths across the transition region.

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