

Abstract Submitted
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Seung-Nelson representation for singular thin sheets¹ THOMAS WITTEN, JIN WANG, University of Chicago — We extend the popular Seung-Nelson model [1] to better study thin elastic sheets with singular or multi-scale structures, which are common phenomena in thin sheets [2]. Because it requires a uniform distribution of lattice points over the simulated sheets, the original model is ill-equipped to study these singular structures. Our extended model retains the essence of the original one, but it allows lattice points to be concentrated as needed in regions of large curvatures. We will compare the two methods by applying them to study the energy of the core region of a developable cone [3].

[1] H. S. Seung and D. R. Nelson, *Phys. Rev. A* **38**, 1005 (1988).

[2] T. A. Witten, *Rev. Mod. Phys.* **79**, 643 (2007).

[3] E. Cerda, S. Chaieb, F. Melo, and L. Mahadevan, *Nature* **401**, 46 (1999).

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