Simulating Liquid Crystals

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February 6, 2021

This document is simply to give an overview of methods used and data obtained in the project. It is likely that many of the methods and results detailed here will be used in the final report, but this is not intended to be a full report; rather a collection of ideas that can be used in the writing of this final report.

1 Methods

1.1 Order Parameter

first methd didn't work etc

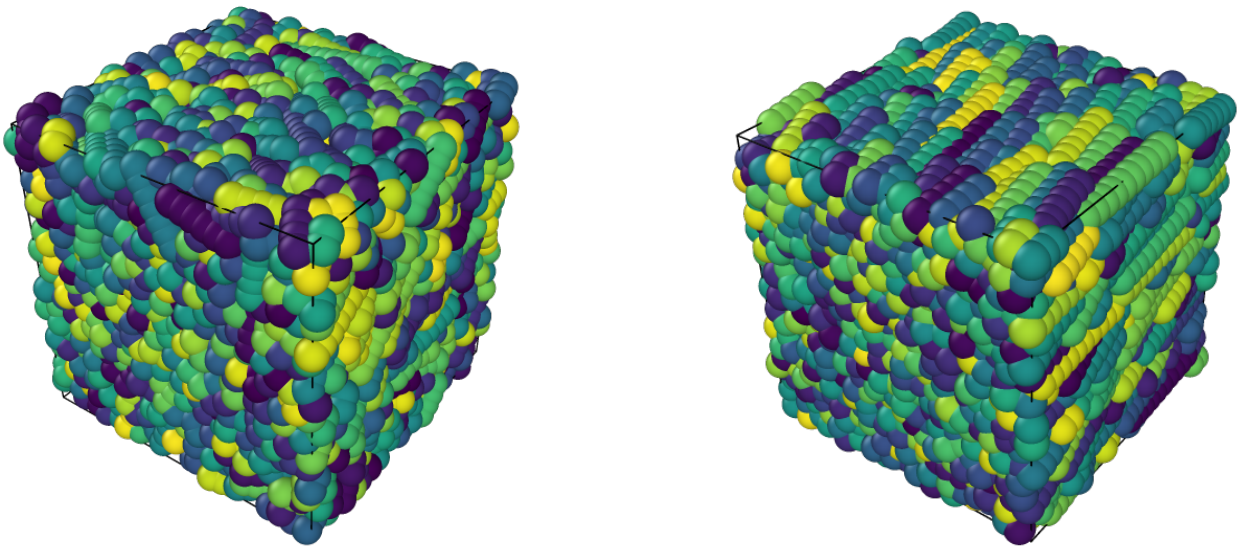
2 Results

2.1 Square Simulation Region

First long simulation to achieve nematic phase formation. [1].

References

[1] Z. Xing, C. Ness, D. Frenkel, and E. Eiser, "Structural and linear elastic properties of DNA hydrogels by coarse-grained simulation", Macromolecules **52**, 504–512 (2019).



(a) *Liquid State*

(b) *Nematic State*

Figure 1: *Comparison between phase appearance, before an after the nematic phase transition. Note the common alignment in the nematic phase, without positional order.*