1 Intro

introduce liquid crystals, briefly, nematic and smectic and maybe some examples with transitions? idk

1.1 Smectics more in detail

1.2 Theories of smectics

Mainly the Landau-DeGennes order parameter, it's successes and problems with focus on numerics – the Pevniy paper Kinda start leaning into E theory

1.3 E theory

Introduce kinda parallel with Q of nematics, try to cover Jack's work.

2 New/my work

Motivations – two core goals – expand the work to 3D and introduce projection operators to the elastic terms. Still main motivations are applications to computations, but some theoretical work to support these applications and to understand the theory better were conducted.

2.1 E as a complex, normal Q

I think get accross that making in complex adds the extra info and a connection to Landau-DeGennes, and requiring normality (along with symmetry and tracelessness) makes it diagonalizable using real, orthogonal eigenvectors.