Seminar

Defect Solutions of the Non-reciprocal Cahn-Hilliard Model: Spirals and Targets

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In this talk I will talk about the defect solutions of the Non-reciprocal Cahn-Hilliard model. We find two kinds of defects, spirals with unit magnitude topological charge, and topologically neutral targets. For a given strength of non-reciprocity, spirals and targets with unique asymptotic wavenumber and amplitude are selected. We use large-scale simulations to show that at low non-reciprocity, a quenched disordered state evolves into quasi-stationary spiral networks. With increasing non-reciprocity, we observe networks composed primarily of targets and beyond a critical threshold, a disorder-order transition from defect networks to travelling waves emerges. The transition is marked by a sharp rise in the global polar order.

References

Defect Solutions of the Non-reciprocal Cahn-Hilliard Model: Spirals and Targets, Navdeep Rana and Ramin Golestanian, https://arxiv.org/abs/2306.03513

Monday, June 19th 2023
04:00 PM (Tea / Coffee 03.45 PM)
Auditorium, TIFR-H