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The Chinese University of Hong Kong



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# Analysis and PDE Seminar

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TITLE: Pattern Formation in Nematic Liquid Crystals

*Date* : Dec 8th, 2022 (Thursday)

*Time* : 10am-11am (Hong Kong time)  
11am-12noon (Korea time)



*Link to ZOOM* : <https://unist-kr.zoom.us/j/3170659442>

Meeting ID : 317 065 9442

Password : APDE21

**Abstract.** In this talk, I will talk about the pattern formation in the spherical droplet under the framework of the 3D–Landau de Gennes theory with finite temperature. With a novel bifurcation diagram, we rigorously construct two solutions with the fundamental defect structures, namely, the biaxial–ring disclination and the split–core–segment disclination. It theoretically confirms the numerical results of Gartland–Mkaddem in 2000. The structures of disclinations are also addressed.

*All are welcome*

This is a joint activity organized by Department of Mathematics, The Chinese University of Hong Kong, Hong Kong; Department of Mathematics, Institute of Mathematical Research, Research Division of Mathematical and Statistical Science, The University of Hong Kong, Hong Kong; and Department of Mathematical Sciences, Ulsan National Institute of Science and Technology, Korea. More details can be found in [https://hkumath.hku.hk/~imr/event/CUHK\\_HKU\\_UNIST\\_Analysis\\_and\\_PDE/index.php](https://hkumath.hku.hk/~imr/event/CUHK_HKU_UNIST_Analysis_and_PDE/index.php).

