Contribution ID: **67** Type: **Poster**

Active matter in two dimensions

Monday 2 September 2024 17:00 (2 hours)

Active matter is a new kind of soft matter relevant to describe numerous biological problems with manifold realizations in two dimensions. I will discuss several intriguing aspects of its phase behavior including the melting of an active solide (with special emphasis on the role of dislocations and disclinations) and the mechanisms leading to motility induced phase separation.

References

Dynamics of Motility-Induced clusters: coarsening beyond Ostwald ripening
Claudio Caporusso, Leticia F. Cugliandolo, Pasquale Digregorio, Giuseppe Gonnella, Demian Levis and Antonio Suma
arXiv:2211.12361 Phys. Rev. Lett. 131, 068201 (2023)

Unified analysis of Topological Defects in 2D systems of Active and Passive disks
Pasquale Digregorio, Demian Levis, Leticia F. Cugliandolo, Giuseppe Gonnella, Ignacio Pagonabarraga
arXiv:2106.03454 Soft Matter 18, 566 (2022)

Motility-Induced Microphase and Macrophase Separation in a two-dimensional Active Brownian Particle system
Claudio B. Caporusso, Pasquale Digregorio, Demian Levis, Leticia F. Cugliandolo, Giuseppe Gonnella
arXiv:2005.06893 Phys. Rev. Lett. 125, 178004 (2020)

Full phase diagram of active Brownian disks: from melting to motility-induced phase separation
Pasquale Digregorio, Demian Levis, Antonio Suma, Leticia F. Cugliandolo, Giuseppe Gonnella and Ignacio Pagonabarraga
arXiv:1805.12484 Phys. Rev. Lett. 121, 098003 (2018)

Short bio (50 words) or link to website

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Relevant publications (optional)

Career stage

Professor

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Track Classification: FINESS