

ICTS Biophysics Seminar

Title : Collective phototaxis of microalgae *Chlamydomonas reinhardtii*

Speaker : Prerna Sharma (Indian Institute of Science, Bengaluru)

Date : Tuesday, 19th March 2024

Time : 10:00 AM (IST)

Abstract : Phototaxis is one of the most fundamental stimulus-response behaviors in biology wherein motile microorganisms sense and respond to light gradients by swimming towards the light source. We show that the phototactic efficiency of model microswimmer *Chlamydomonas reinhardtii* has a minimum at a well-defined cell number density, for a given light gradient, above which the phototaxis behavior of a collection of cells can even exceed the performance obtainable from single isolated cells. We show that the origin of enhancement of performance above the critical concentration lies in the slowing down of the cells, which enables them to sense light more effectively. We also show that this steady-state phenomenology is well captured by modeling the phototactic response as a density-dependent torque acting on an active Brownian particle.

Venue : Offline: Chern Lecture Hall

Online: Please click on the below link to join the seminar

<https://icts-res-in.zoom.us/j/92030848912?pwd=eVZBdHdMN3piaHNUQ1k5SXZJd3N4Zz09>

Meeting ID: 920 3084 8912

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