The Centre for Life in the Flow (CLiF)

IUI Eilat

An Introduction to PIV

A short workshop at the Inter-University Institute in Eilat
May 28-30, 2017

Organisms that live in water relay on the movement of the fluid around and within them to respire, capture prey, reproduce, migrate and distribute their offspring. The research of interaction between organisms and their environment has hitherto focused on biological mechanisms, constraints and pathways. However, it became clear that understanding the interaction between the flow and the organism is necessary to understand basic aspects of the organismal biology. Key to this understanding is the ability to quantify the flow field around the organism. Particle Image Velocimetry (PIV) is one of the most powerful techniques to visualize and quantify the flow of water at a wide range of spatial and temporal scales.

To help users that are interested in the interaction between organisms and flow and utilize this technique, CLiF offers a short PIV course, focusing on applications of PIV in biologically-relevant setups. The course will cover principles of image acquisition, illumination, optics, seeding and camera utilization, image analysis aspects such as image deformation, cross-correlation and peak detection, data analysis and processing of turbulence statistics, spatial and temporal signals decomposition and integral flow analysis techniques. Topics such as combined PIV and Laser Induced Fluorescence, 3D PIV and Particle Tracking Velocimetry will also be briefly discussed. The course will be composed of lectures, hands-on practical labs and computer exercises.

The course will take place between May 28-30th 2017 (Sunday 8 am-Tuesday 1 pm) at the Center for life in the flow (CLiF), located at IUI Eilat. The course will be taught by Alex Liberzon, Roi Gurka, Uri Shavit and Roi Holzman. Participation is limited to 20 students. Priority will be given to graduate students and post-docs that focus their research on the interactions between organisms and their fluid environments, and plan to use PIV. The course cost, including course activities and accommodation at the IUI dorms (shared rooms), is 350 NIS.

Applicants should send a letter of intent, explaining why the course is relevant for their research program (no more than one page), and a CV including a publication list. Applications should be sent to Roi Holzman (holzman@post.tau.ac.il) until April 30th 2017.