

Les mardis de
L'IAB

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OBSERVING PROTEIN DYNAMICS IN BIOMOLECULAR CONDENSATES AND THEIR EMERGENT MATERIAL PROPERTIES

27.OCTOBER 2026 – 11 AM – LECTURE HALL

The cell nucleus is crowded with highly charged proteins and nucleic acids, yet it remains dynamic. Biomolecular condensates, membraneless compartments proposed to help organize such environments, can be as fluid as water or as thick as honey. What sets these differences at the molecular level is unclear. We studied condensates formed by highly charged, disordered nuclear proteins, such as histone H1 and prothymosin- α , whose viscosities span a hundredfold. Viscosity closely tracks how fast the proteins move and how quickly their chains rearrange, and simple physical relations predict one from the other. Simulations show that the key factor is how long amino acids stay in contact: arginine prolongs contacts and salt shortens them. Such rapid contact exchange may help keep crowded compartments like the nucleus fluid.

I will also present the lab's future direction on protein aggregation dynamics, particularly on the surface of protein condensates.

Invited by : Olivier Destaing

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Allée des Alpes, 38700 La Tronche (tram line B, stop : Grand Sablon)
The seminar is followed by discussions and exchanges with the speaker and a sandwich buffet is offered