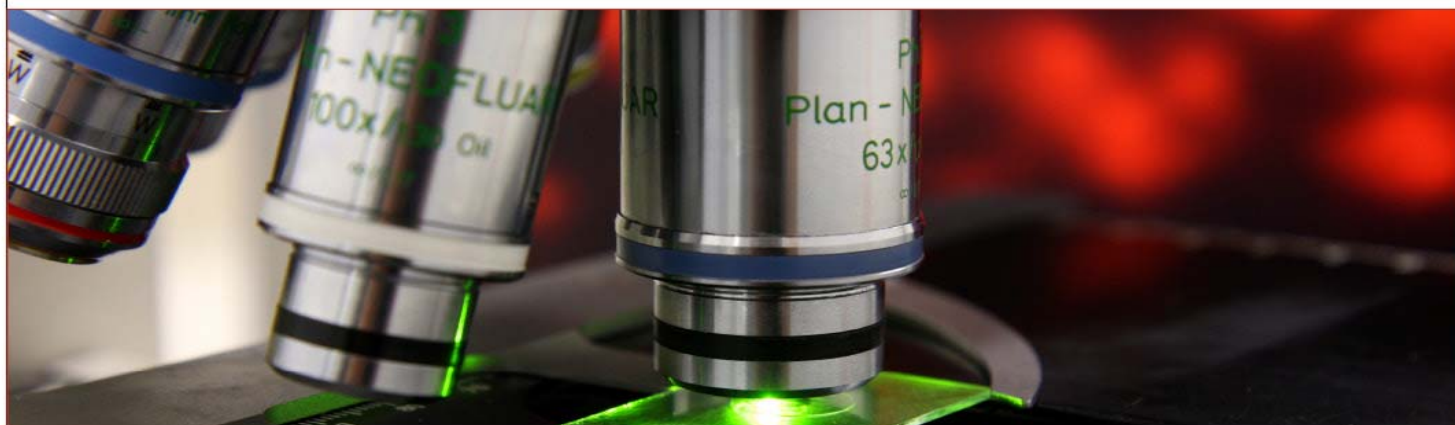


SÉMINAIRES ET CONFÉRENCES



Huy Bui

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**« The molecular architecture of the cilium by cryo-EM
and proteomics »**

DNA Cilia are ubiquitous, hair-like appendages found in eukaryotic cells that carry out functions of cell motility and sensory reception. Cilia contain an intriguing cytoskeletal structure, termed the axoneme, that consists of nine doublet microtubules radially interlinked and longitudinally organized in multiple specific repeat units. Little is known, however, how the axoneme allows cilia to be both actively bendable and sturdy or how it is assembled. To answer these questions, we used cryo-electron microscopy to structurally analyze several of the repeating units of the doublet at subnanometer resolution. This structural detail enables us to unambiguously assign α - and β -tubulins in the doublet microtubule lattice. Our study, for the first time, demonstrates the existence of an inner sheath composed of different kinds of microtubule inner proteins inside the doublet that likely stabilizes the structure and facilitates the specific building of the B-tubule.



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