## Valentin Laplaud (LadHyX)

## Physical and mechanical properties of the cell actin cortex unraveled by the Magnetic Pincher

The cell cortex is a contractile actin meshwork, which determines cell shape and is essential for cell mechanics, migration and division. Because the cortical thickness is below optical resolution, it has been generally considered as a thin uniform two-dimensional layer. Using two mutually attracted magnetic beads, one inside the cell and the other in the extracellular medium, we pinch the cortex of dendritic cells and provide an accurate and time resolved measure of its thickness. Our observations draw a new picture of the cell cortex as a highly dynamic layer, harboring large fluctuations in its third dimension due to actomyosin contractility. We additionnally explore the mechanical properties of the actin cell cortex by controlling the attraction between the beads and thus the applied pinching force.