

Jeudi 11 Mars 2021 à 11h

<https://ecolepolytechnique.zoom.us/j/89303703124?pwd=Rzh0VCswa3FkV3hhYVJjYnh5VllxZz09>

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***Quantitative Imaging of Nuclear Architecture and
DNA Target Search in a Living Cell***

Nuclear architecture has emerged as a key player in DNA target search and maintenance of genome integrity. In recent work we have developed a series of fluorescence microscopy methods to track the movement of molecules around the complex DNA networks within the nuclei of live cells. Based on fluorescence lifetime and fluctuation spectroscopy, this technology has the spatiotemporal resolution to map the impact genome organisation has on nuclear traffic and multi-protein complex formation. From using these methods, we have discovered that DNA networks rearrange to create a chromatin network that facilitates repair and transcription factor recruitment to target DNA sites. Collectively this body of work suggests genome organisation to serve as 'road map' for DNA-binding proteins to navigate the nucleus and maintain genome function.