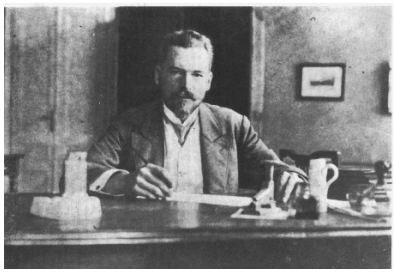

Contribution ID: **19** Type: **Contributed talk**

Detecting Transient Trapping from a Single Trajectory: A Structural Approach

Wednesday, 29 September 2021 17:10 (20 minutes)

We introduce a new method to detect transient trapping events within a single particle trajectory, thus allowing the explicit accounting of changes in the particle's dynamics over time. Our method is based on new measures of a smoothed recurrence matrix. The newly introduced set of measures takes into account both the spatial and temporal structure of the trajectory. Therefore, it is adapted to study short-lived trapping domains that are not visited by multiple trajectories. Contrary to most existing methods, it does not rely on using a window, sliding along the trajectory, but rather investigates the trajectory as a whole. This method provides useful information to study intracellular and plasma membrane compartmentalisation. Additionally, this method is applied to single particle trajectory data of β2 -adrenergic receptors, revealing that receptor stimulation results in increased trapping of receptors in defined domains, without changing the heterogeneous diffusion of free receptors.

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