The Organization and Motion of Macromolecules on the Cell Membrane

Understanding how cells communicate is a fundamental problem in biology and important in developing new therapies to control diseases. An important part of the communication processes is the interaction of macromolecules in the cell membrane with the environment external to the cell. These molecules are highly organized but also undergo rapid thermal motion. There is substantial evidence that this dynamic organization strongly impacts signal transduction. Spatial statistics provide an excellent tool to understand the organization, while anomalous random walks provide an excellent tool for the analysis of the motion.