

## **Modelling Physical Limits of Migration by a Non Local Kinetic Model**

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Migrating cells choose their preferential direction of motion in response to different signals and stimuli sensed by spanning their external environment. However, the presence of dense fibrous regions, lack of proper substrate, and cell overcrowding may hamper cells from moving in certain directions or even from sensing beyond regions that practically act like physical barriers. We propose a non-local kinetic model to include situations in which the sensing radius is not constant, but depends on position, sensing direction and time as the behaviour of the cell might be determined on the basis of information collected before reaching physically limiting configurations. We analyse how the actual possible sensing of the environment influences the dynamics by recovering the appropriate macroscopic limits and by integrating numerically the kinetic transport equation.