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## Collective cell migration in an open channel

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The collective migration of cells during embryogenesis is key to the development of vertebrates, and improper migration can lead to severe developmental diseases and deformities. As a simple model for such cell migration we study the particle based Vicsek model in an open channel geometry where cells continuously enter and leave the domain. This results in two distinct types of motion – one corresponds to desired, well-ordered migration, while the other corresponds to disordered migration. We characterise the different types of collective behaviour and propose a theoretical description to determine the conditions for coherent collective cell migration.

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