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Combining image analysis and cell migration model for whole cell tracking

Cell tracking algorithms which automate and systematise the analysis of time-lapse image data sets of cells are an indispensable tool in the modelling and understanding cellular phenomena. we present a theoretical framework and an algorithm for whole-cell tracking. Within this work, we consider that "tracking" is equivalent to a dynamic reconstruction of the whole cell data (morphologies) from static image data sets. This work aims to design a framework for cell tracking within which the recovered data reflects the physics of the forward model.