

Physico-biologie aux mésoéchelles

Densification of a monolayer of 3T3 fibroblasts confined in a stripe of width 500 μm . As the cells divide, they orient parallel to the edges. This orientation then propagates toward the center. Eventually, the orientation is perfect across the whole stripe. The color codes for the local orientation (red=aligned with the stripe)

Cell displacements within the adhesive patches. MDCK cell displacements within a $R = 100 \mu\text{m}$ patch. Images were acquired in phase-contrast mode. Note the large correlated displacements in the first 30h and the development of a 3D rim at the edge at long times.

Propagation of a bacteria concentration wave (*E. coli*) in a microchannel. Velocity of the wave : 4 $\mu\text{m/s}$. Width of the channel 500 μm , depth : 100 μm .

Migration of an epithelial monolayer on free surface (MDCK cells; video duration 33hr; initial wound width 400 μm). Note the correlated cell movements within the monolayer and the fingering that develops at the free edge.

When migrating on very thin wires (here radius=5 μm), epithelial MDCK cells tend to break away from the leading edge and migrate individually. bar=50 μm .