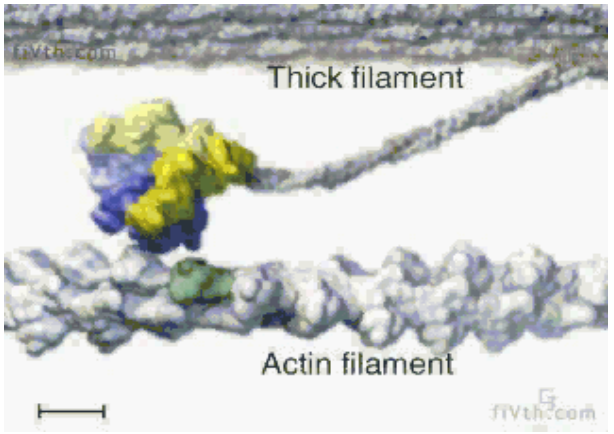
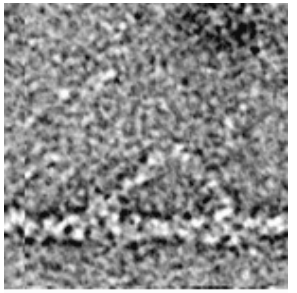
Myosin motors

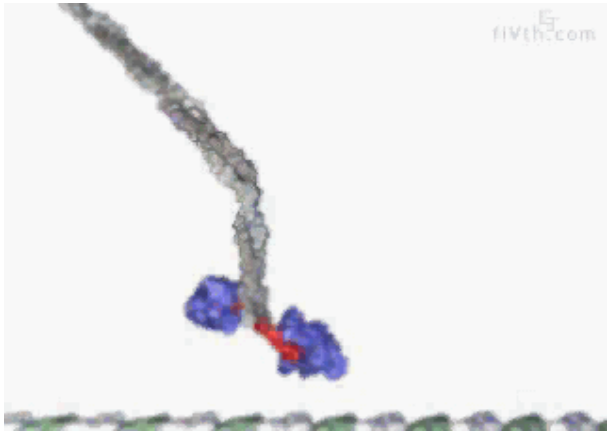


Myosin II R.Vale

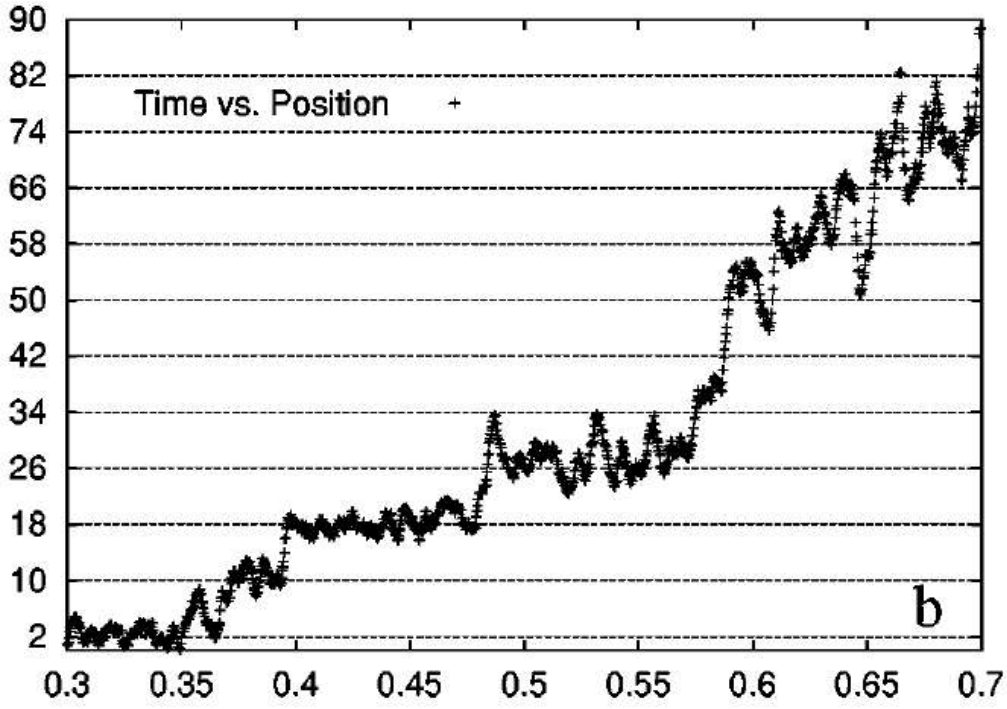


Myosin V

Kinesin Motors

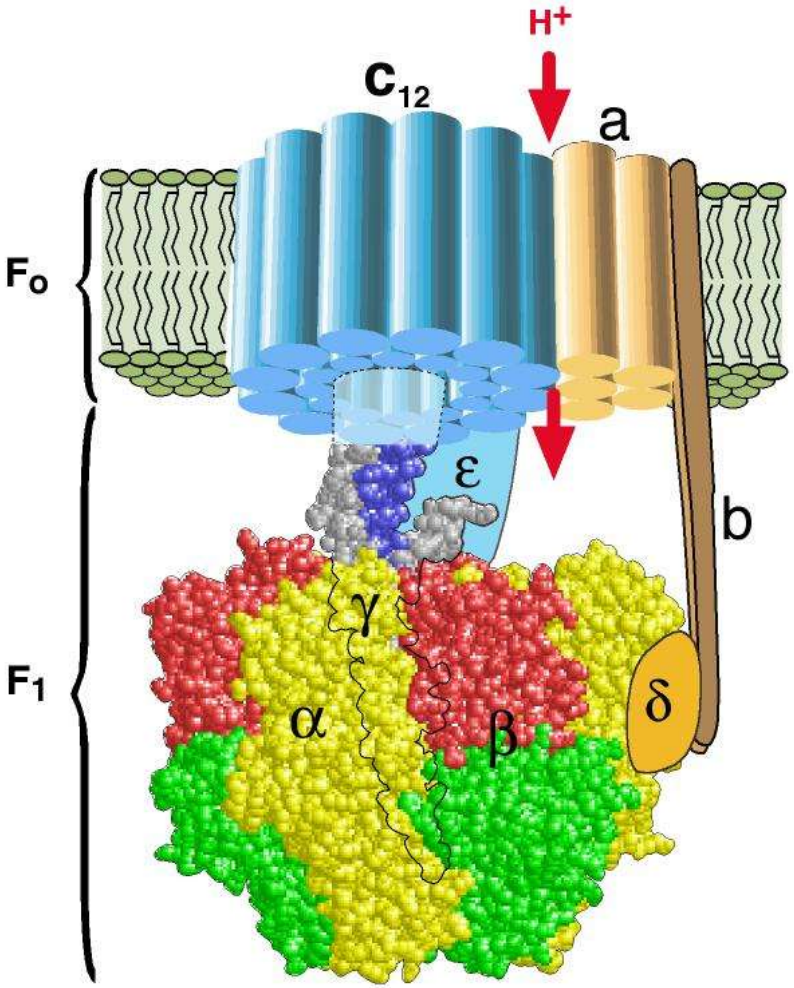


R.Vale

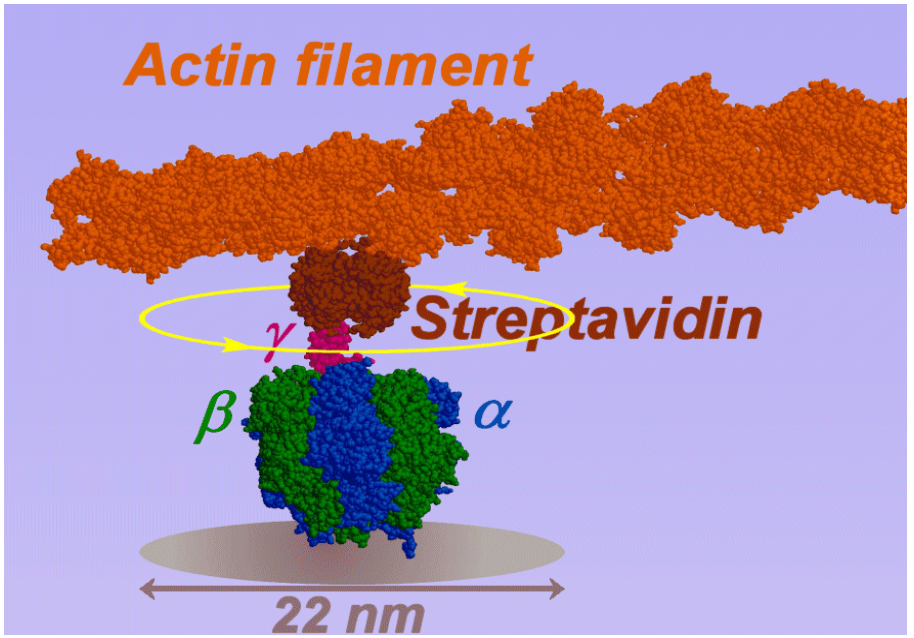


G.Cappello et al.

ATP synthase

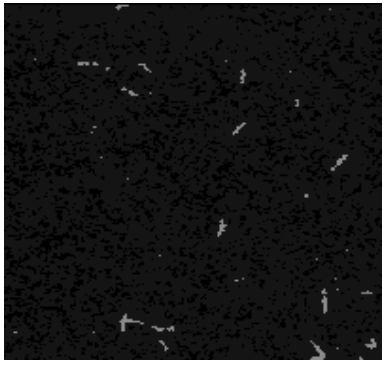


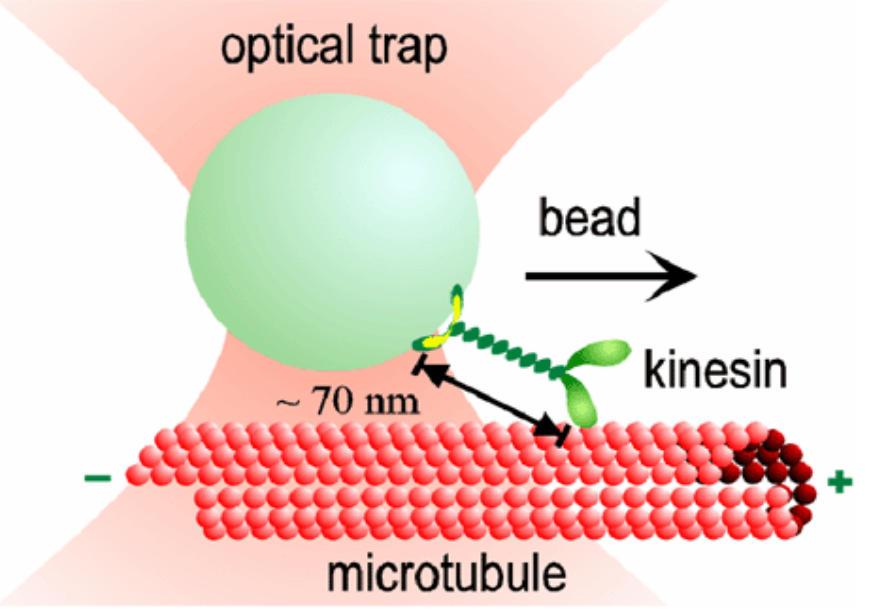
H. Wang and G. Oster (1998). Nature 396:279-282.



Kinosita

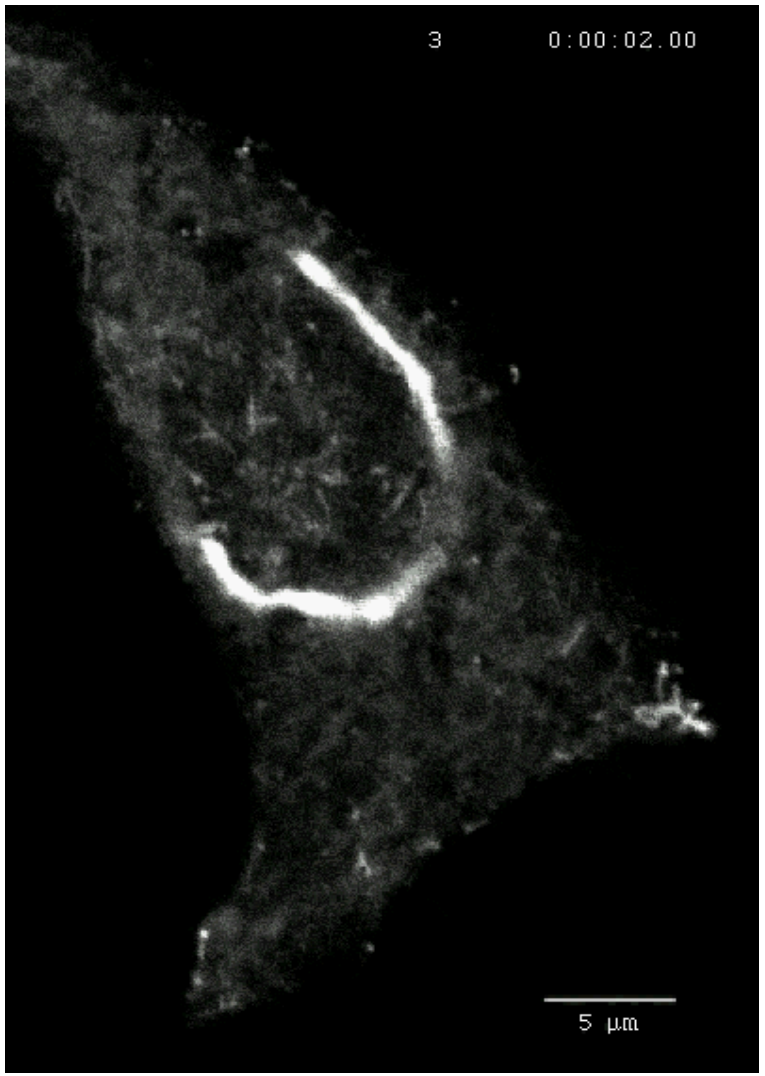
Motility and bead assays



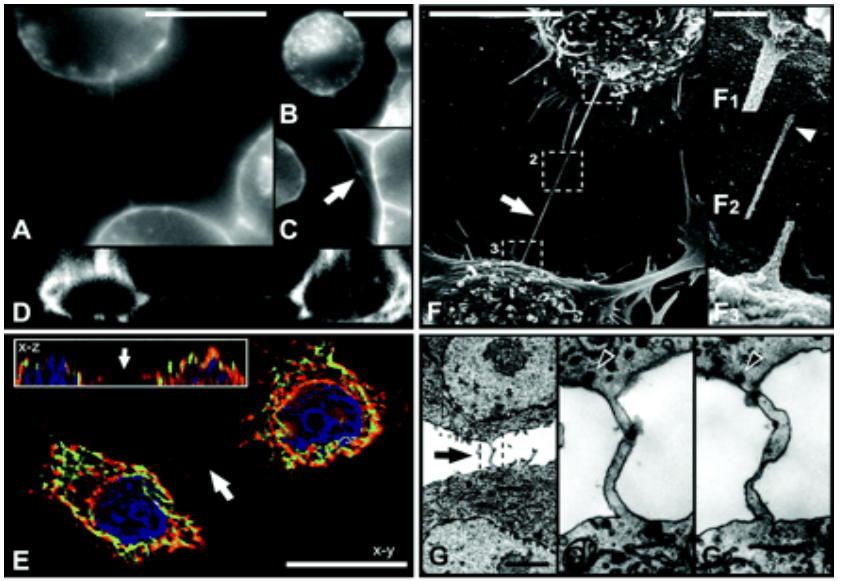


S.Block

Cellular transport and membrane tubes

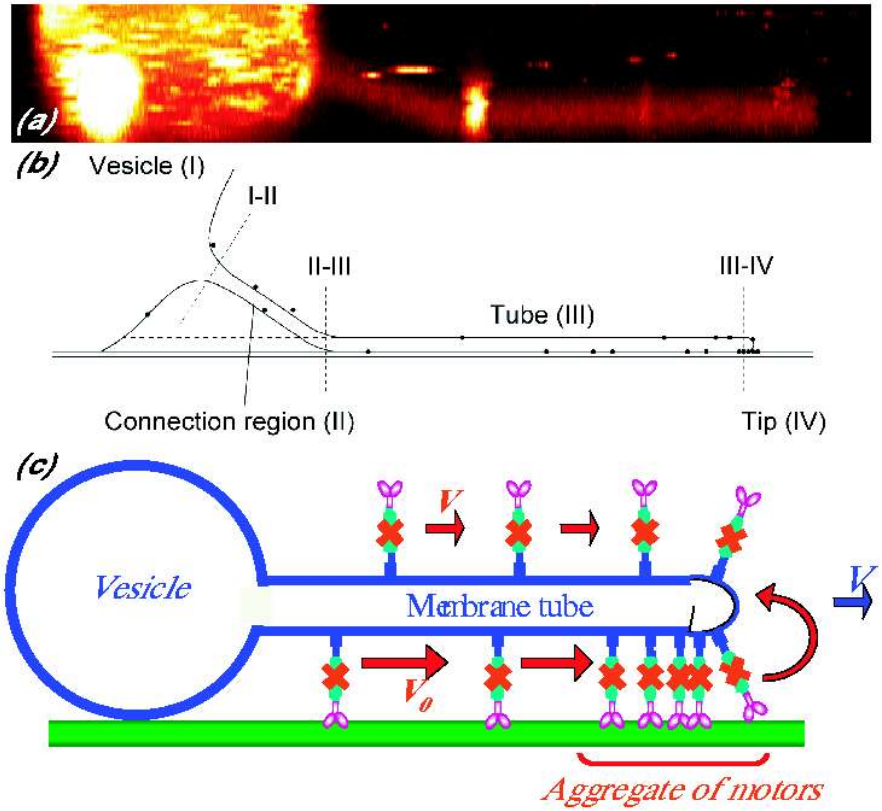


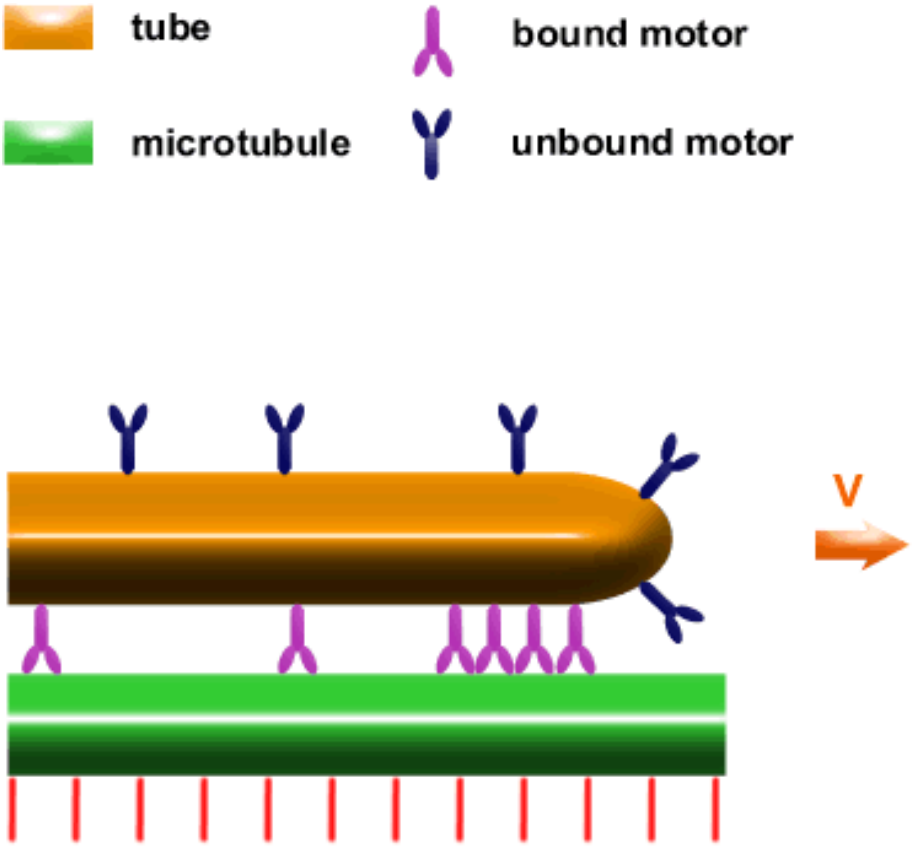
Tubes inside a cell
White et al.



Tubes between cells
Rustom et al

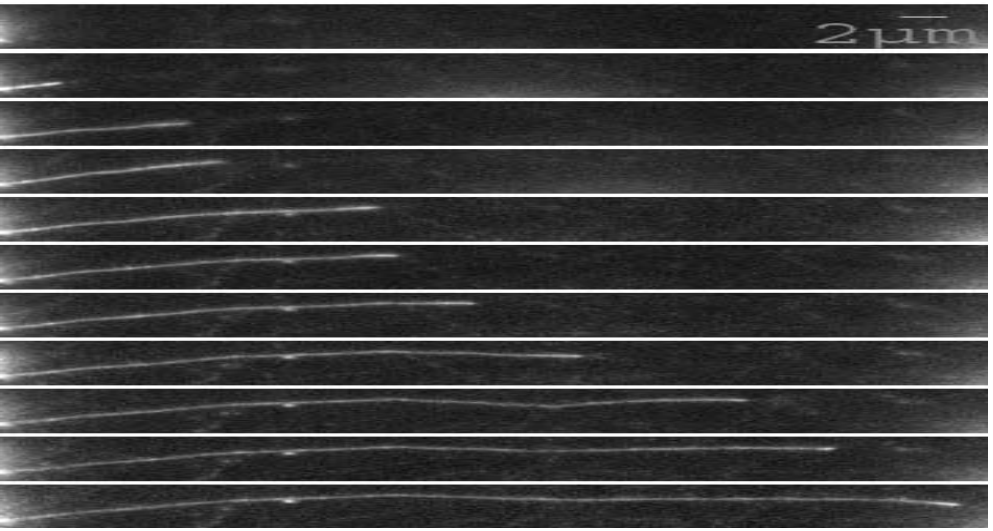
Pulling tubes with molecular motors





C.Leduc, P.Bassereau et al.

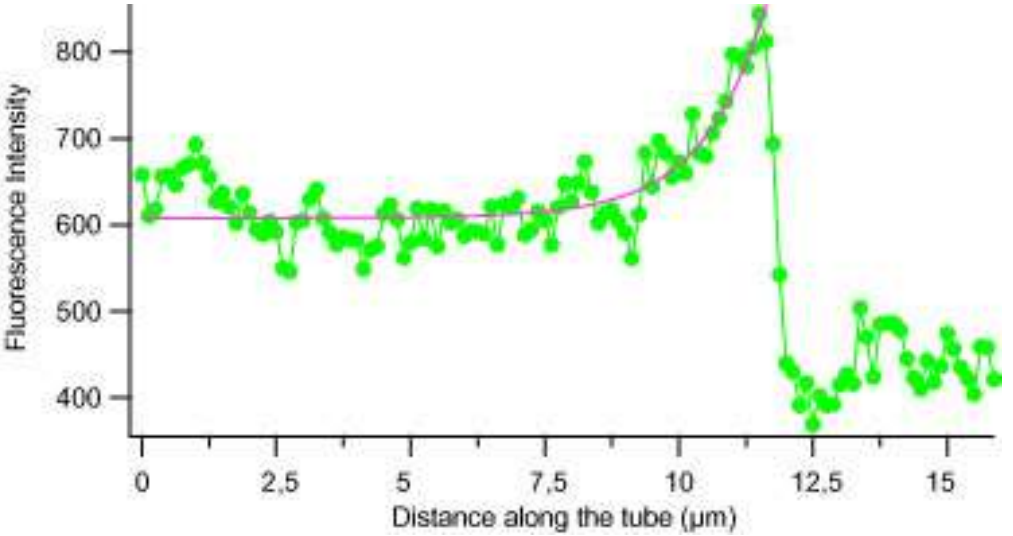
Motors density



C.Leduc

Short time regime

$k_B = 3.0\ s^{-1}$



Numerical simulations of tube growth

O. Campas

Discrete model

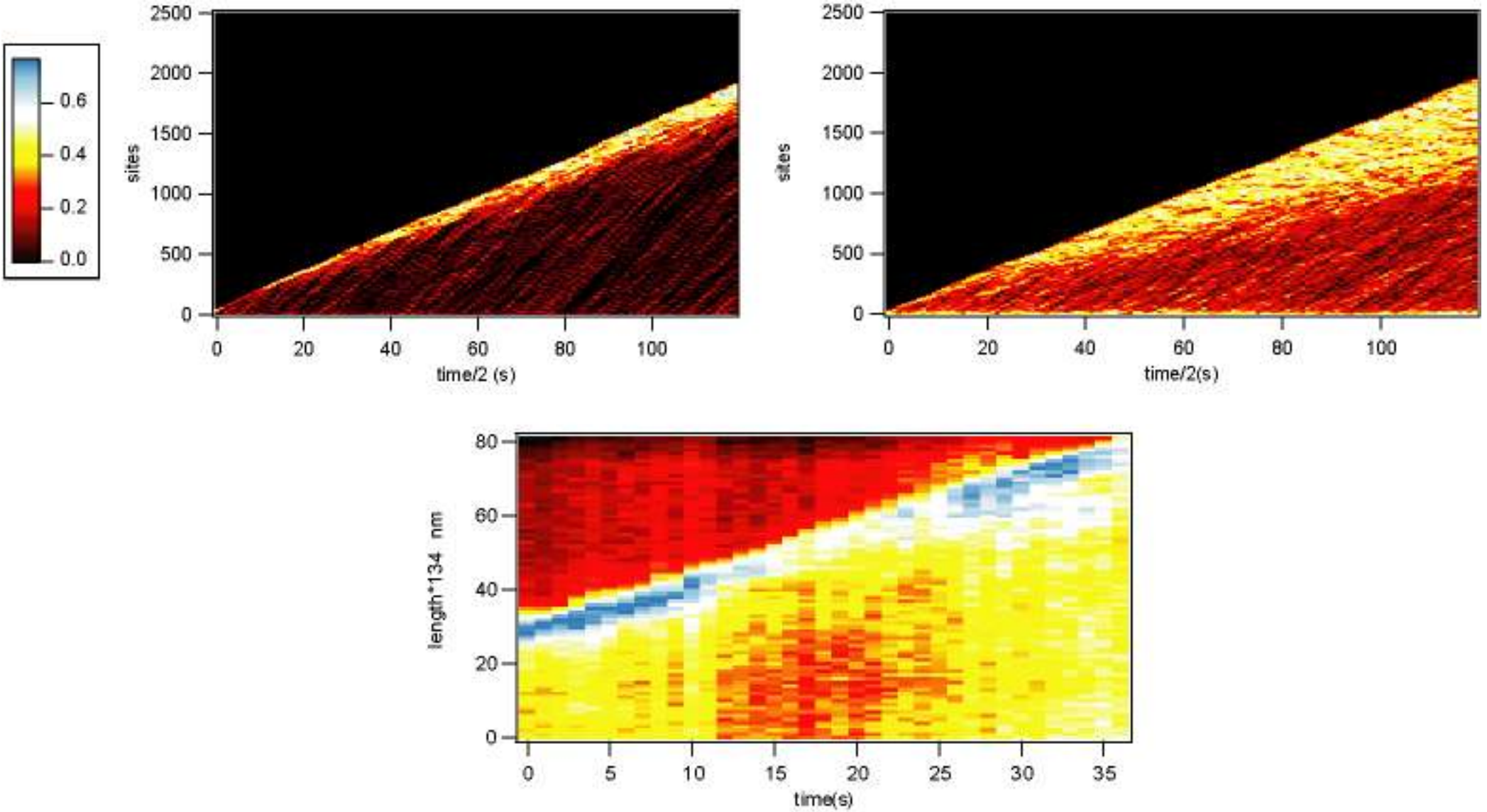
0001001100010010101011111 bound motors tip
0001110000010010100101000 unbound motors

Stochatic moves motion: drift + diffusion depends on applied force

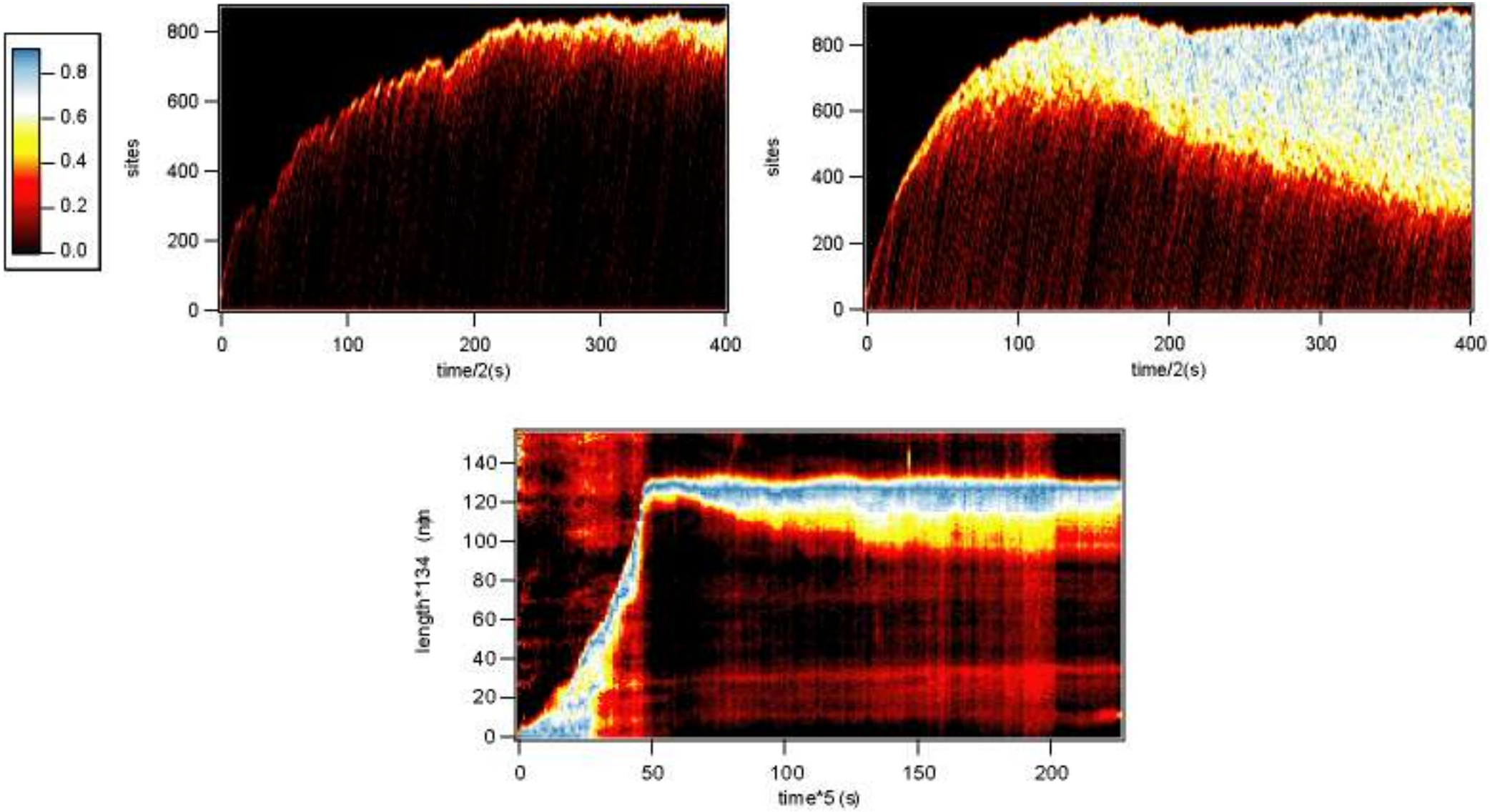
binding
unbinding

Tube fluctuations: small number of motors
Traffic jams: heterogeneities in motor distribution
Tube oscillations: non constant tension
Parallel protofilaments

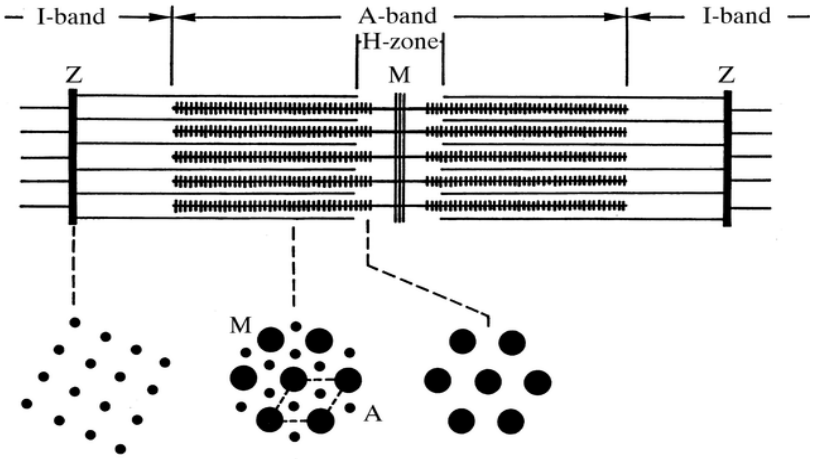
Space-time plots



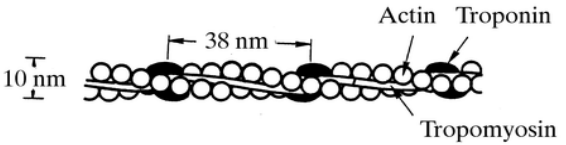
Numerical simulations of tube growth



Muscle structure



(*a*)



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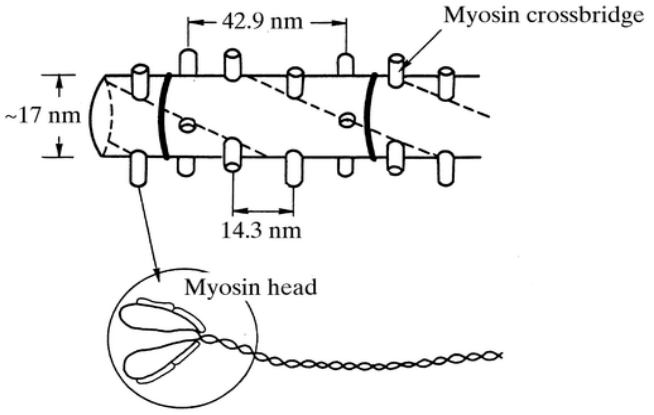

(*c*)