

List of Movies

1.3	Arabidopsis root tip growth (<i>YouTube-link</i>)	3
2.4	Sample holder - Root on the surface of gel (<i>YouTube-link</i>)	22
2.5	Lateral root induction by gravity stimulation (<i>YouTube-link</i>)	23
2.7	Mechanical properties of Phytigel and agarose (<i>YouTube-link</i>)	28
2.8	Arabidopsis in the mDSLIM (<i>YouTube-link</i>)	30
2.10	Experimental protocol for recording Arabidopsis in the mDSLIM (<i>YouTube-link</i>)	32
2.12	Adjustable perfusion outlet for variable water level (<i>YouTube-link</i>)...	34
2.13	Recording multiple regions of interest at the same time (<i>YouTube-link</i>)	35
2.15	Time lapse recording along multiple directions (<i>YouTube-link</i>)	36
2.17	<i>Trans</i> -Golgi network vesicles deep within the primary root (<i>YouTube-link</i>)	39
3.2	Lateral root growth in Arabidopsis (<i>YouTube-link</i>)	53
3.7	GSA formation in lateral roots (<i>YouTube-link</i>)	60
3.8	Lateral root GSA formation in <i>pin3 pin4 pin7</i> triple mutant and wildtype (<i>YouTube-link</i>)	61
3.9	Growing and shrinking of microtubules (<i>YouTube-link</i>)	62
3.10	Dynamic of actin filaments (<i>YouTube-link</i>)	63
3.11	Actin around the nucleus (<i>YouTube-link</i>)	63
3.12	Chloroplast movement (<i>YouTube-link</i>)	64
3.13	Membrane dynamic in plastids (<i>YouTube-link</i>)	65
3.14	Tracking of late endosomes (<i>YouTube-link</i>)	65
3.15	Endosome tracking in a growing root hair tip (<i>YouTube-link</i>)	66
3.16.1	Oscillating root hair growth (<i>YouTube-link</i>)	68
3.16.2	Oscillating root hair growth - making-of (<i>YouTube-link</i>)	68
3.20	GFP-RabA1d accumulates at growing cell plate (<i>YouTube-link</i>)	71
3.21	Microtubule organization during cytokinesis (<i>YouTube-link</i>)	72

3.22	Microtubules and plasmamembrane in cotyledones of Arabidopsis (<i>YouTube-link</i>)	74
3.24	<i>Oryza sativa</i> adventitious root emergence (<i>YouTube-link</i>)	76
3.25	First two consecutive cell divisions of lateral root formation (<i>YouTube-link</i>)	78
3.26	Pericycle cells swell prior to their first division (<i>YouTube-link</i>)	79
3.27	Lateral root quickly grows when overlaying tissue ruptures (<i>YouTube-link</i>)	80
3.29	Length/width shape segmentation during lateral root development (<i>YouTube-link</i>)	82
3.30	Dynamics of growth in height of primordia in <i>aur1-2;2-2</i> double mutant and wild type (<i>YouTube-link</i>)	82
3.31	Recording of the entire process of lateral root formation (<i>YouTube-link</i>)	84
3.32	Time lapse recording #120803 (<i>YouTube-link</i>)	85
3.33	Time lapse recording #121204 (<i>YouTube-link</i>)	85
3.34	Time lapse recording #121211 (<i>YouTube-link</i>)	86
3.35	Time lapse recording #130508 (<i>YouTube-link</i>)	86
3.36	Time lapse recording #130607 (<i>YouTube-link</i>)	87
3.38	The datasets (<i>YouTube-link</i>)	89
3.40	Synchronization on the actual number of cells (<i>YouTube-link</i>)	91
3.47	3D overlay of the objects with the membrane channel of #121211 (<i>YouTube-link</i>)	98
3.48	Cell file development in the future time course (<i>YouTube-link</i>)	99
3.50	Layer assignment of the virtual lateral root #130607 (<i>YouTube-link</i>) ..	101
3.57	Time lapse recording of the <i>aur1-2 aur2-2</i> double mutant, dataset #131203 (<i>YouTube-link</i>)	108
3.58	Altered cell divisions in <i>aur1-2 aur2-2</i> double mutant (<i>YouTube-link</i>)	110
3.59.1	Layer assignment in the <i>aur1-2 aur2-2</i> double mutant #131203 (<i>YouTube-link</i>)	111
3.59.2	3D overlay of the objects with the membrane channel of the <i>aur1-2</i> <i>aur2-2</i> double mutant #131203 (<i>YouTube-link</i>)	111
5.6	Retouche of the tissue overlaying the lateral root primordium (<i>YouTube-link</i>)	143

5.7	3D overlay of the objects with the membrane channel of #120830 (<i>YouTube-link</i>)	144
5.8	3D overlay of the objects with the membrane channel of #121204 (<i>YouTube-link</i>)	144
5.9	3D overlay of the objects with the membrane channel of #130508 (<i>YouTube-link</i>)	145
5.10	3D overlay of the objects with the membrane channel of #130607 (<i>YouTube-link</i>)	145
5.12	Layer assignment of the virtual lateral root #120830 (<i>YouTube-link</i>).	148
5.13	Layer assignment of the virtual lateral root #121204 (<i>YouTube-link</i>).	149
5.14	Layer assignment of the virtual lateral root #121211 (<i>YouTube-link</i>).	150
5.15	Layer assignment of the virtual lateral root #130508 (<i>YouTube-link</i>).	151