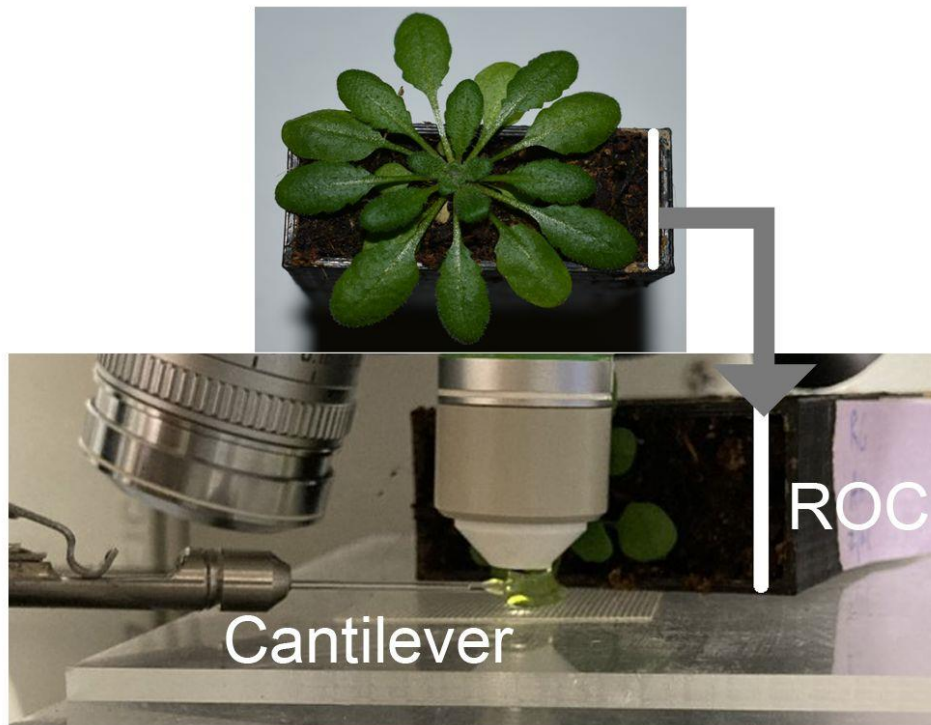
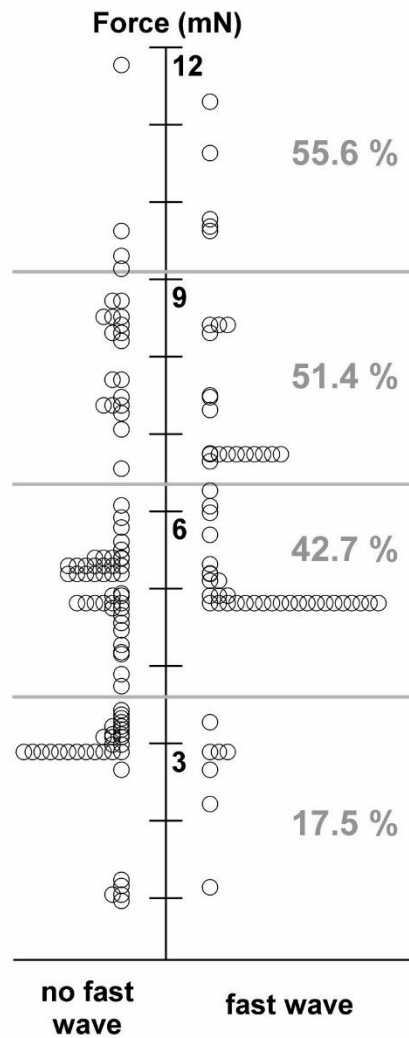


Pavement cells distinguish touch from letting go

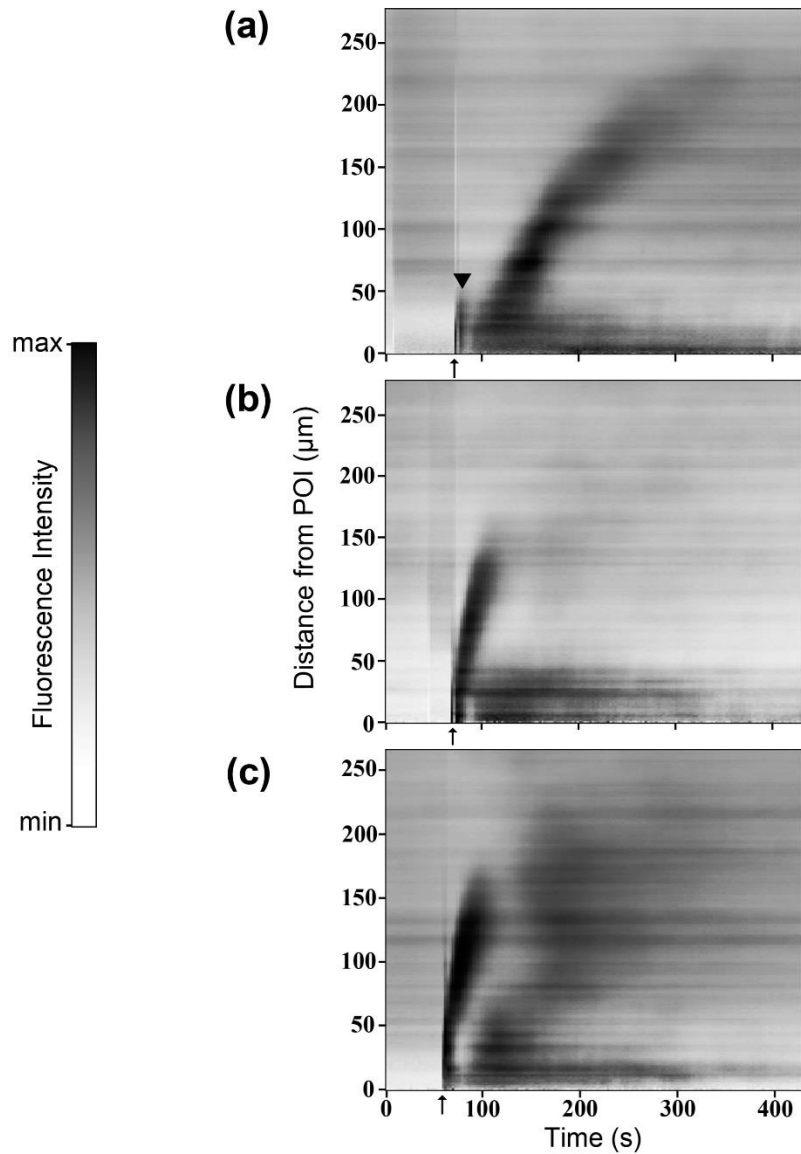
In the format provided by the
authors and unedited



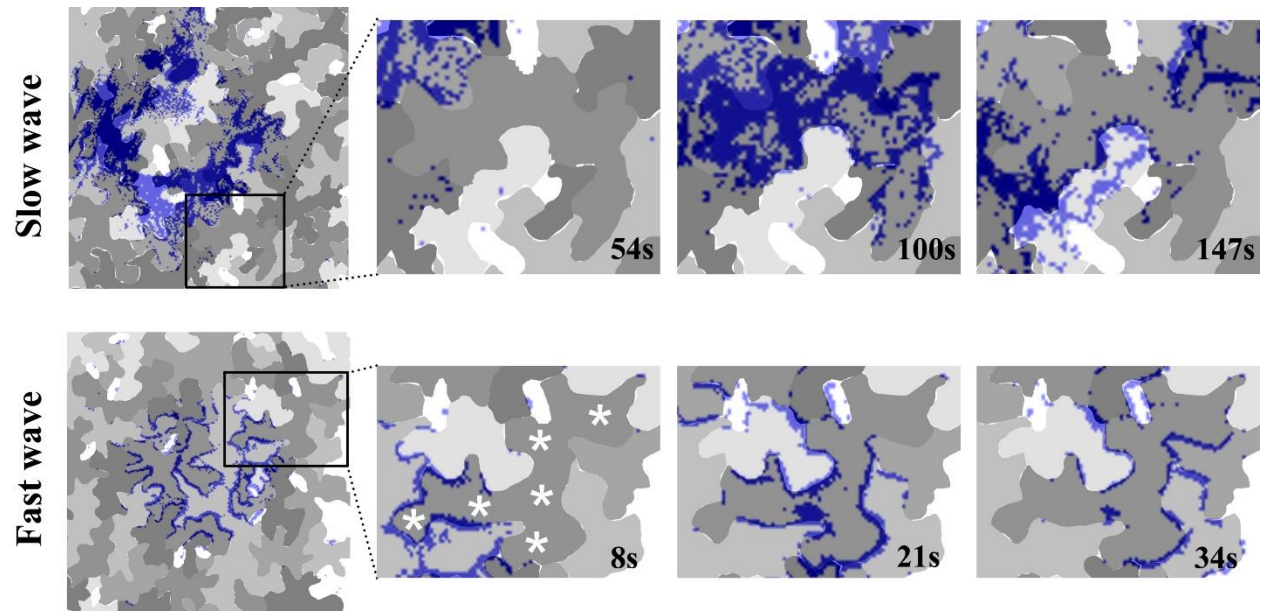
Supplementary Figure 1 Standard experimental set-up. *Arabidopsis* plants were grown individually in custom-built vessels that allowed experimentation on intact plants (top). These so-called ROCs could be placed sideways on the stage of a confocal laser-scanning microscope, permitting access to individual leaves still connected to the plant (bottom).



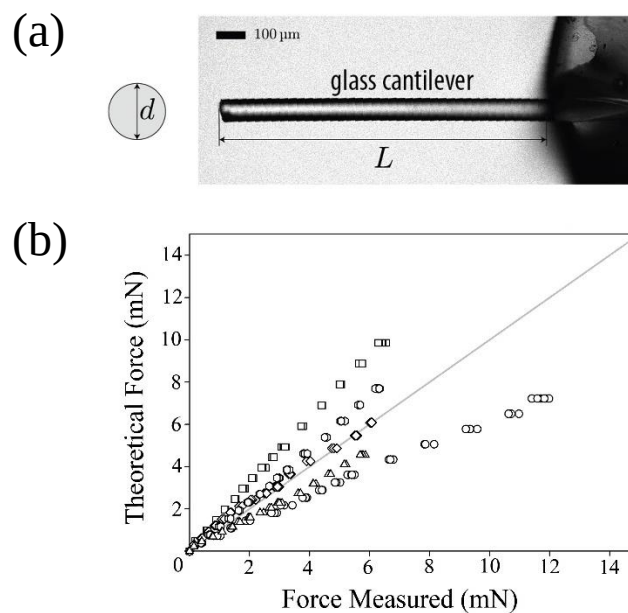
Supplementary Figure 2 Dependence of the frequency of fast waves following cantilever removal on the force the cantilever had applied to a pavement cell (standard experiments, compare Fig. 1A). The total range of forces applied (1–11.8 mN) is seen subdivided into four equal parts, and the proportion of experiments in which fast waves were observed is indicated. The proportion tended to increase with increasing force. Slow waves developed in all experiments following cantilever placement.



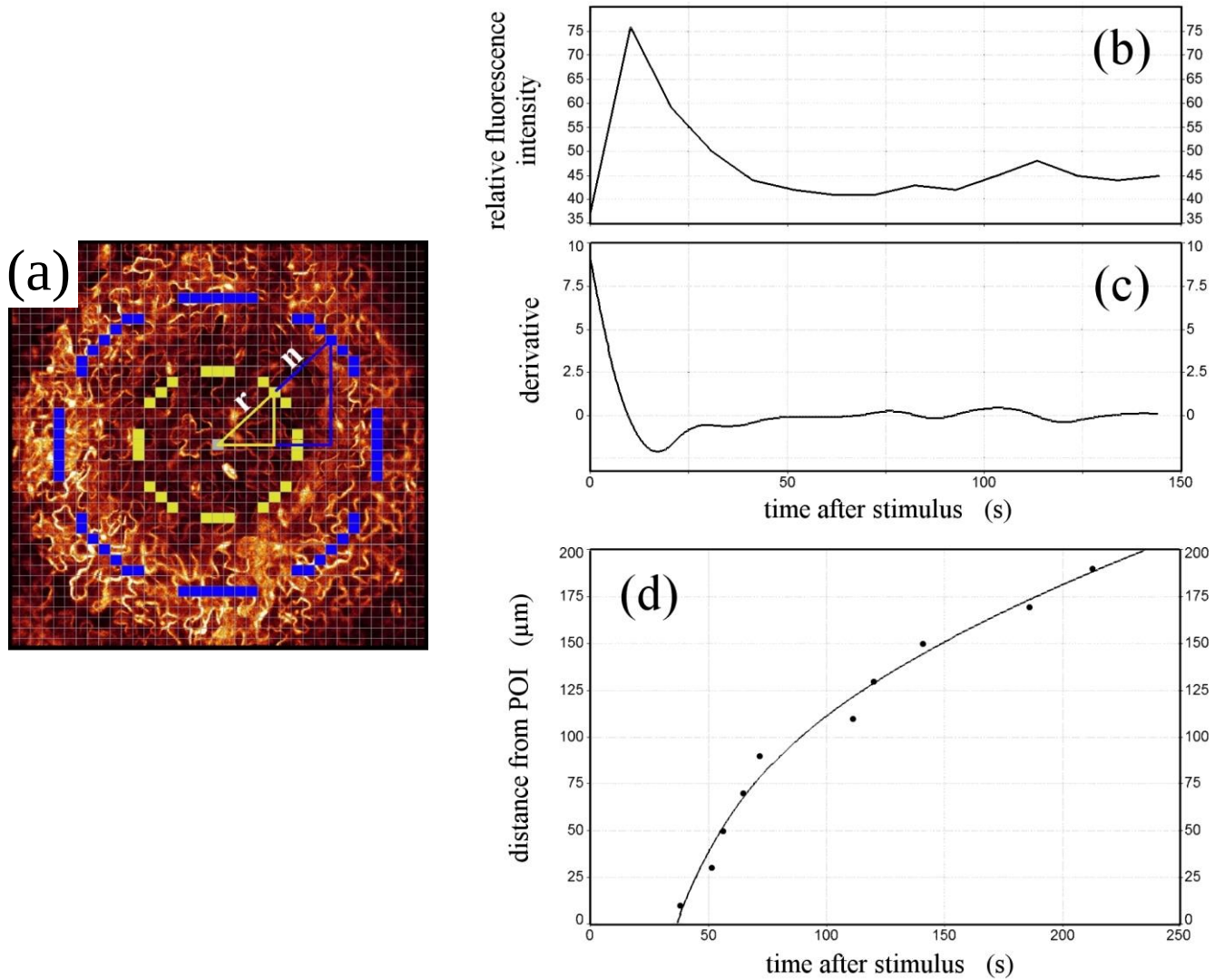
Supplementary Figure 3 Three experiments in which a cantilever was placed on a pavement cell at the times indicated by arrows underneath the abscissae, and removed again after 5 s. Fluorescence intensities averaged over pixels of the same distance from the point of impact (in 1 μm steps) are plotted on a distance vs. time field. In all experiments, a short initial response occurred (filled arrowhead in (a)), together with a delayed slow wave (a), an non-delayed fast wave (b), and an overlapping combination of a fast and a slow wave.



Supplementary Figure 4 Time-lapse sketches of pavement epidermal cells in different shades of grey overlaid with pixels showing fluorescence intensities of $\geq 30\%$ above background (blue) during a representative slow wave (top) and a representative fast wave (bottom). Note that the fast wave is running across a large cell marked by asterisks, suggesting that the immediate cause of calcium influx into the cytosol is not a parameter that has the same magnitude in the entire cell, such as turgor. The original micrographs are part of Supplementary Videos 6 (slow wave) and 7 (fast wave).



Supplementary Figure 5 Calibration of force cantilevers. (a) Cantilever with length L and diameter d . (b) Theoretical force of five representative cantilevers compared to measured force. The gray line represents complete coincidence of theoretical and measured force.



Supplementary Figure 6 Schematic description of the method used for analysing the velocity of wave propagation. (a) Groups of pixels (yellow and blue) of equal distance (r , yellow; $r + n$, blue) from the point of impact (POI; reference pixel shown in grey. Not drawn to scale). (b) Example of the average pixel intensity at a given distance from the POI through time. (c) Derivative of a B-spline of the curve in (b); the first occurrence of value 0 indicates the time when fluorescence intensity peaks. (d) Times of the occurrence of maximum fluorescence intensity for different distances from the POI. Data are shown together with a fitted regression function that describes the trajectory of maximum fluorescence intensity. Its slope represents the wave's velocity, which is steadily declining over time.