

Abstract Submitted
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An Empirical Study of the Velocity Field for Arabidopsis Root Cells¹ AMY E. CRAIG², TRACY GUY³, BRAD HIGGINS⁴, TESSA DURHAM BROOKS⁵, CHRISTOPHER D. WENTWORTH⁶, Doane College — The velocity field of a plant's primary root describes the velocity of cells as a function of position measured with respect to the root apex. This field has a characteristic sigmoid shape in many plants that can be described empirically by a modified logistics function. In this study we measured the velocity field for root cells in *Arabidopsis thaliana* for several different genotypes and environmental conditions using an inexpensive computer-based image acquisition and analysis system. Image analysis was done using open source software. We fit our data to the modified logistics function and determined whether there were statistically significant changes in model parameters depending on growing conditions.

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