

Abstract Submitted
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Defining the Velocity Field of Root Cells in *Arabidopsis* Seedlings Using Open Source Image Processing Tools¹ AMY E. CRAIG, BRAD R. HIGGINS, Dept. of Physics, Doane College, Crete, NE, TRACY GUY, TESSA DURHAM BROOKS, Dept. of Biology, Doane College, Crete, NE, CHRISTOPHER D. WENTWORTH, Dept. of Physics, Doane College, Crete, NE — The velocity field for cells in a growing root is a function of a cell's position with respect to the root apex and time. For many species of plant this function has the same general sigmoid shape described by a modified logistics curve. In this investigation we obtain microscopic images of *Arabidopsis* seedling roots over a 20 minute period of time, measure the velocity field for root cells using an application developed with the open source mathematics application Octave, and test whether the velocity field can be described by the modified logistics function. We find support for describing the velocity field by the modified logistics function.

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Christopher D. Wentworth
Dept. of Physics, Doane College, Crete, NE

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