Abstract Submitted
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Plant Root Growth In Granular Media[1] DAWN WENDELL, PEKO HOSOI, MIT — Roots grow in a variety of granular substrates. However, the substrates are often treated in ways which minimize or neglect the inhomogeneities arising from the influence of inter-particle forces. Experiments are often run using gels or average stress measurements. This presentation discusses the effect of the local structure of the particulate environment on the root's direction. Using photoelastic particles and particles with a variety of Young's Moduli, we investigate the influence of inter-particle forces and particle stiffness on a pinto bean root's ability to grow through a fully-saturated granular medium. The level of particle contact force through which the roots successfully grow is determined and the influence of particle stiffness on root direction is investigated.

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