Plant morphogenesis across scales

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Abstract

What sets the size and form of living organisms is still, by large, an open question. During this talk, I will illustrate how we are addressing this question by examining the links between spatial scales, from subcellular to organ, both experimentally and theoretically. First, I will present how we are deriving continuous plant growth mechanical models using homogenisation. Second, I will discuss how directionality of organ growth emerges from cell level. Last, I will present predictions of fluctuations at multiple scales and experimental tests of these predictions, by developing a data analysis approach that is broadly relevant to geometrically disordered materials.

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