Pumping Water

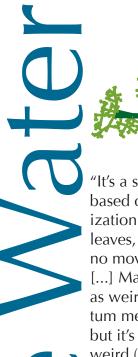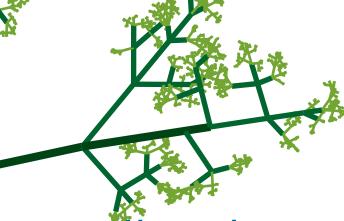## Tensile Water

Evaporative Pull

$$\Psi_{wv} = 135 \cdot \ln \frac{\%RH}{100}$$

"It's a solar engine based on the vaporization of water in leaves, and it needs no moving parts. [...] Maybe it's not as weird as quantum mechanics, but it's about as weird (and wonderful) as physical biology gets."

Steven Vogel
The Life of a Leaf
Raising Water

Poiseuille's Flow

$$J_v = \left(\frac{\Delta p}{1}\right)\left(\frac{\pi}{8 \cdot \eta}\right) \cdot R^4$$

Euler's Column

$$F_{cr} = \frac{E \cdot I \cdot \pi^2}{L_{eff}^2}$$

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