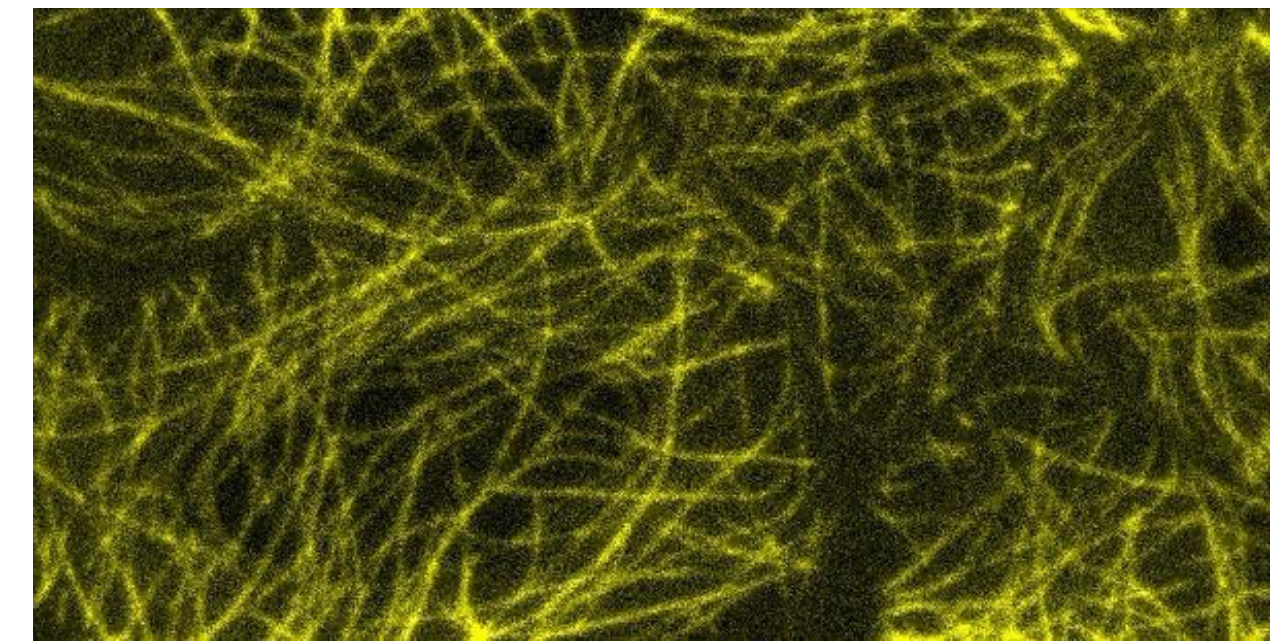


Overview and Motivation

The Plant Cell Cortical Microtubule Array (CMA) DGG



Cortical microtubules in Arabidopsis petiole cells¹.

- The organization of the plant CMA is important for different cell processes.
- The results in this section are from the precursor to DGGML, CajeteCMA².
- We use this model as a test problem for the emergent effects of the crossover, zippering, and collision induce catastrophe.
- We also use this as an initial test of the “survival of aligned” hypothesis³.
- We ran three experiments:
 - In experiment 1 we found long-time network like behavior.
 - In experiment 2 we found long-time behavior of local alignment.
 - In experiment 3 we found evidence indicating the approximate algorithm is faster than the exact, even in serial.

1. (Mjolsness and Wightman) unpublished image data

2. (Medwedeff and Mjolsness, 2023); 3. (Tindemans et al., 2010)

