6.885
L8.4
Oct. 4, 2004

Tree method [Lang 1994–2003: others in Japan]

- find the folding of the smallest square into "origami base" whose projection is a desired metric tree:

- catches:
  - optimization is difficult ~ as hard as disk packing
    ~ but can be solved in exponential time & heuristic approaches do well
  - non-self-intersection is currently a conjecture (we're working on it)

- more in
  - **TreeMaker** computer program (try it!)
  - Lang's Origami Design Secrets
  - Lang's guest lecture on Monday, Nov. 15, 2004 (& other talks & workshops)

Margulis napkin problem: [Lang ~2002]

Can increase perimeter of a square arbitrarily much

- based on flattening of sea urchin
- can you make a checkerboard with this idea? unlikely, but...