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L24.3
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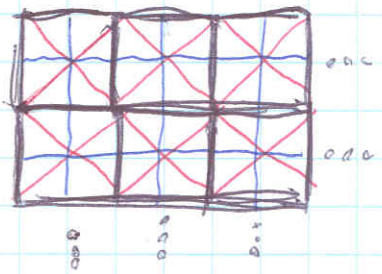
Toby Schachman: box pleating

- history: – Moser's train design
  – Neil Elias
  – Robert Lang's Origami Design Secrets
- "gadgets": – initial pleating
  – Elias "stretch fold" to shape into tree
  – can also be viewed as repeated sink folds
- goal: understand when paper can be collapsed to make certain points leaves & desired tree



- really a grid of 2×2 squares (looking at even lines of big grid)
- normalized uniaxial base: sink folded to have all vertices in two horizontal layers, a (half) unit apart
  – diagonals always connect two layers
  – bottom layer only has □ creases
  – top layer only has + creases
- Gauntlet = set of bottom-layer creases
  – decompose paper into "rivers" à la Lang
- idea: Gauntlet is sufficient to reconstruct crease pattern & folded state via local rules

  or find that it doesn't (can't) work

- in progress: make this an algorithm
- feeling: box pleating pattern is most "versatile" iterated crease pattern (efficient & often collapsable)
- future: 3D voxelated shapes