Foamlike disorder in the developing Drosophila embryo RICHARD ZALLEN, Dept. of Physics, Virginia Tech, JENNIFER A. ZALLEN, Developmental Biology Program, Sloan-Kettering Institute — Convergent extension is the cell-rearrangement process by which a developing embryo elongates to establish the body axis. In Drosophila (fruitfly), this occurs within a one-cell-thick epithelial layer. Confocal microscopy was used to image the two-dimensional cell pattern at various stages in the process [1]. Increasing foamlike disorder was observed and analyzed via $p(n)$, the frequency of occurrence of n-sided cells [2], and related statistical measures such as the Shannon entropy. During convergent extension in Drosophila, the peak at $p(6)$ drops from 0.65 to 0.38 and the second moment of $p(n)$ triples to 1.1. An initial degree of hexatic interface-orientation order disappears during the process. [1] J.A. Zallen and E. Wieschaus, Dev. Cell 6, 343 (2004); [2] J.A. Zallen and R. Zallen, J. Phys.: Condensed Matter 16, S5073 (2004).