

Abstract Submitted
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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).

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