



# CDB SEMINAR

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Thursday, April 14, 2011

16:00~17:00 C1F CDB Auditorium

## Estimating the dynamics of forces during morphogenesis

### Summary

Mechanical dynamics in development are crucial for variety of morphologies of multi-cellular organisms. However, the understandings of such physical processes still remain unclear, mainly because there is no proper experimental method to directly measure and quantify the forces in a multi-cellular tissue in vivo. To overcome this technical limitation, we have developed a noninvasive method to estimate a pressure of each cell and a tension of each cell-cell contact surface. We applied this method to the *Drosophila* wing, and confirmed that the estimated values of tension were consistent with responses to laser ablation. Our measurements of mechanical parameters, together with those of molecular and cellular ones, led us to conclude that external force stretches the wing along the proximal-distal axis, respectively. Using numerical simulations and force relaxing experiments, the anisotropic force is suggested to promote hexagonal packing of cells.

### Host:

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