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Quantification of Behavior During *Drosophila* Courtship UGNE KLIBAITE, GORDON BERMAN, Princeton University, JESSICA CANDE, DAVID STERN, Janelia Research Campus, HHMI, JOSHUA SHAEVITZ, Princeton University — Fruit flies display varying and species-specific behavioral repertoires, especially during highly stereotyped activities such as courtship. Interspecies differences in specific behaviors may arise from physical differences, e.g. a different type or speed of appendage motion, or higher-order changes such as differences in the frequencies of particular actions. One example is the use of wing-rowing by *D. santomea* males that is rarely, but sometimes, seen during *D. yakuba* courtship. We wish to study the complex interaction of two individuals during courtship. We extend our group's previous work on mapping the postural dynamics of individual flies to analyze the simultaneous mapping of male and female behavior for hundreds of hours of courtship video data. Using this algorithm, we compare courtship behavior of dozens of targeted introgressions between *D. yakuba* and *D. santomea* to probe for differences in courtship and to determine which regions of the genome are responsible for this diversity.

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