Quantiﬁcation of Behavioral Stereotypy in Flies JASON MANLEY, Princeton University, GORDON BERMAN, Emory University, JOSHUA SHAEVITZ, Princeton University — A commonly accepted assumption in the study of behavior is that an organisms behavioral repertoire can be represented by a relatively small set of stereotyped actions. Here, “stereotypy” is deﬁned as a measure of the similarity of repetitions of a behavior. Our group utilizes data-driven analyses on videos of ground-based <em>Drosophila</em> to organize the set of spontaneous behaviors into a two-dimensional map, or behavioral space. We utilize this framework to deﬁne a metric for behavioral stereotypy. This measure quantiﬁes the variance in a given behaviors periodic trajectory through a space representing its postural degrees of freedom. This newly developed behavioral metric has conﬁrmed a high degree of stereotypy among most behaviors and we correlate stereotypy with various physiological effects.