

# Feng Yu

Rate of Adaptation Under Weak Selection.

## **Abstract:**

We consider the accumulation of beneficial and deleterious mutations in asexual populations. The rate of adaptation is affected by the total mutation rate, proportion of beneficial mutations, and population size  $N$ . We describe a weak selection model for moderate population sizes. We use a Girsanov transform to obtain an expansion formula for the rate of adaptation, and establish some connections between terms in this expansion and quantities of interest in a corresponding neutral model.