

# Average Extrema of a Geometric Random Walk

Justin Grieves\*, Dr. David Neal

In this talk, we discuss the average maximum and average minimum values obtained by one-dimensional random walks that are stopped upon a first "occurrence". For example go up and stop the first time we move downward or stay constant and find the average maximum and average minimum. Results are applied to a player's expected earnings (or losses) on a casino game when using a geometric strategy.