The process of damage simulation.

For each final GHG level :[450, 650, 1000], run Monte Carlo for ***over*** times (the over variable in the code is only use for increase the accuracy of calculation of d(n,p).). Therefore, we only analyzed the process for the inner loop.

For each final GHG Level :[450, 650,1000] make the following simulation separately.

Calculate the average damage value according to the percentile of probability of final period. For example, if there are five period, there will be 16 nodes for the final period. If every node have equal probability, the probability will be 1/16. The number used to calculate average damage will be 1/16\*ndraws.

Calculate the damage for different period and different draws based on the sorted consumptions

Sort the consumption and temperature for different period and different draws from small to big based on the value of final period.

We can arrive at three sets of damage coefficients w.r.t different GHG level. This data can be used to establish the interpolation table for mitigation optimization

For a given draw (fixed parameter), calculate consumption for different period. Do the same thing ndraws times.

Add the disaster term using tipping point and calculate the whole consumption

Calculate based on Formulate (25). Then calculate the *consumption without disaster based on Pindyck[2009]*

Draw ndraws times, and generate three arrays to save these random values.

Three distribution functions to draw

0: Pindyck displace gamma

1: Wagner‐Weitzman normal

2: implies Roe‐Baker

Calculate Disaster consumption (disaster tail gamma distribution )

Draw which also follows gamma distribution

Draw based a distribution function.