paper\_figs\_rotations201911 : create paper figures from rotation runs

Andy South, Sam Jones and Ian Hastings

2020-03-23

Code to plot and analyse rotations runs for paper.

Runs themselves are done from rotation\_runs2019.Rmd.

16 expts of 10,000 runs each comparing rotations and sequences.

#fig1 before this is model description

# example scenarios

# A1 frequency switch insecticides same, no costs no disp



# A2 frequency switch insecticides same, costs no disp



# C2 mortality switch insecticides same, no costs, disp



# A3 frequency switch insecticides same, no costs, disp



# B2 frequency switch insecticides different, costs



# difference between rotations and sequences, all runs

## # A tibble: 2 x 2  
## gens\_rot\_minus\_seq n  
## <dbl> <int>  
## 1 -10 2  
## 2 0 9998



# pcent difference between rotations and sequences, all runs



# at each generations below threshold for rotations, which strategy was best



# at each generations below threshold for rotations, which strategy was best



# count proportion of scenarios not reaching resistance thresholds

## proportion runs not reaching thresholds : 0.2986187

## proportion runs (that did reach threshold) where rotations and sequence the same : 0.5616313

## proportion runs (that did reach threshold) where rotations >20 % better than sequence : 0.03543125

# PRCC to show the sensitivity of the difference between rotation and sequence to inputs

# this can only be used for the experiments where all insecticides are the same

# (because in the ones where insecticides differ there are multiple values for each input)

# start by running on just A expts



# new - mean mortality over whole sim

# slightly surprising that not much variation

# this one colours by best strategy in generation terms

# B1 suggests that runs where rotation is better may have

# lower mortality under rotation

# try to find a different way of showing that

# (e.g. just plot gens\_diff against mortality diff)











#try to establish whether #runs that have higher generations for rotations #also have lower mean mortality

