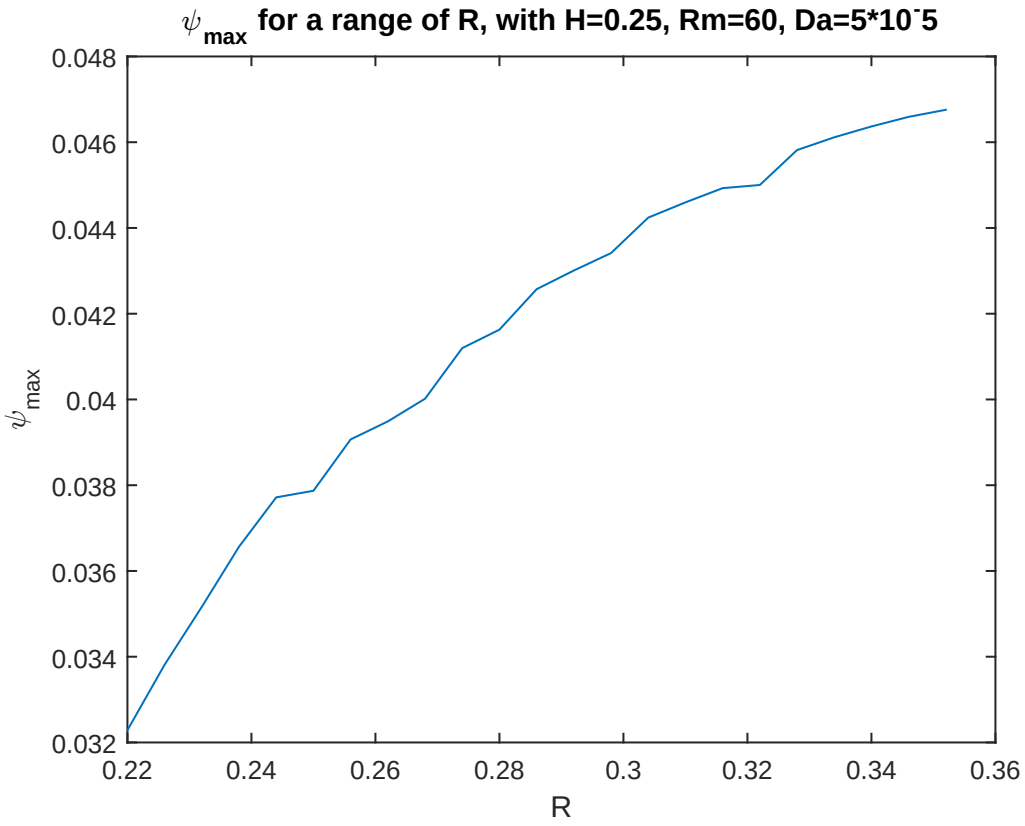
1 Results

Starting from $R = 0.25, H = 0.25, Rm = 60, Da = 5 \times 10^{-}5$, R was varied in steps of 0.006 ($2.5\% of 0.25$).

When R was decreased, the new initial value of b was set to the steady state value of a for $R + 0.006$. If at any point I got stuck in a state of $a_{relaxed} = b$ for successive timesteps I would increase b by 1% and continue.

The plot below shows the value of ψ_{max} for a range of R. All other parameters were kept the same.

Calculations were performed on a 40x40 grid, and each new steady state took on avergae a couple of minutes to be found.


ψ_{max} for a range of R, with H=0.25, Rm=60, Da=5*10^-5
0.048
0.046
0.044
0.042
0.04
0.038
0.036
0.034
0.032
ψ_{max}
0.22
0.24
0.26
0.28
0.3
0.32
0.34
0.36
R