



2

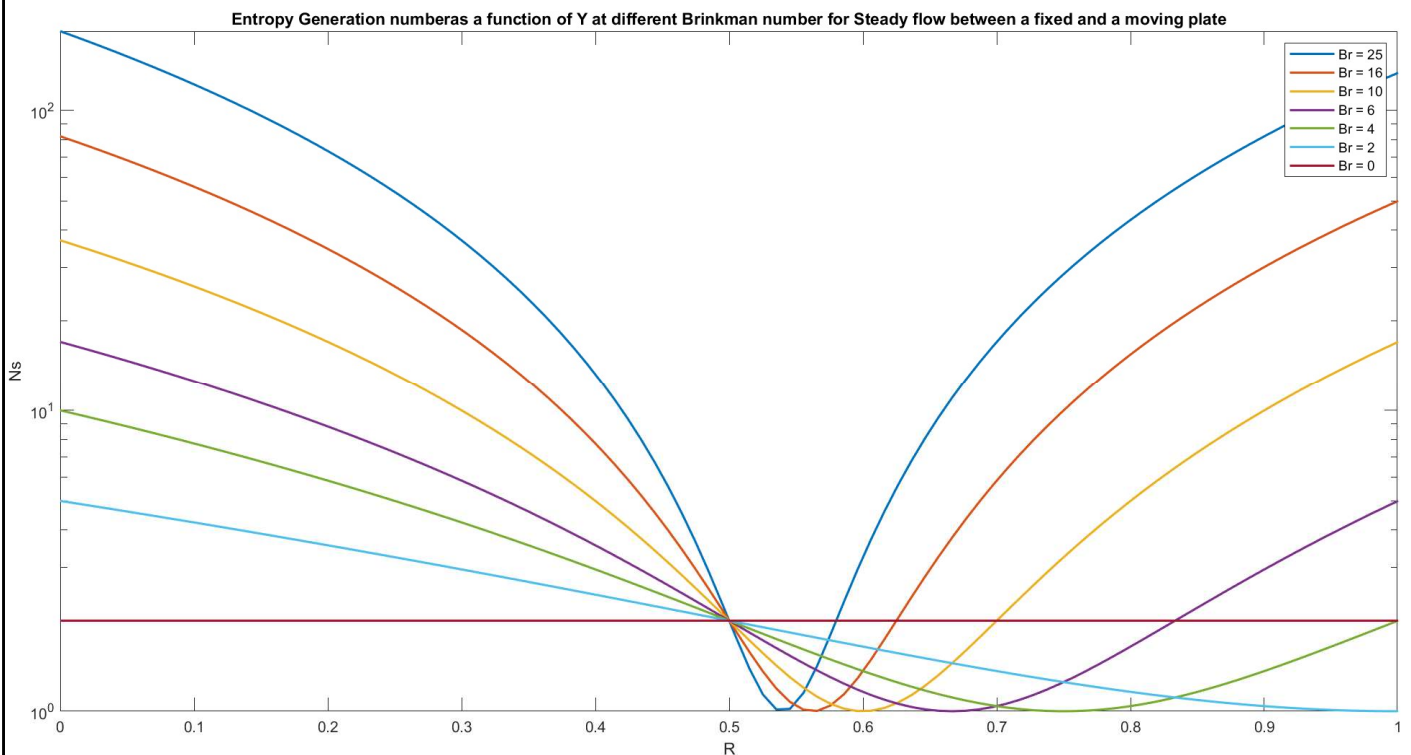
Code :

```

Y = linspace(0,1,100);
semilogy(Y,(1+(25./2)-25*Y).^2 +1,LineWidth=1.5)
xlabel('R')
ylabel('Ns')
title('Entropy Generation number as a function of Y at different Brinkman number
for Steady flow between a fixed and a moving plate')
hold on
plot(Y,(1+(16./2)-16*Y).^2 +1,LineWidth=1.5)
plot(Y,(1+(10./2)-10*Y).^2 +1,LineWidth=1.5)
plot(Y,(1+(6./2)-6*Y).^2 +1,LineWidth=1.5)
plot(Y,(1+(4./2)-4*Y).^2 +1,LineWidth=1.5)
plot(Y,(1+(2./2)-2*Y).^2 +1,LineWidth=1.5)
plot(Y,(1+(0./2)-0*Y).^2 +1,LineWidth=1.5)
hold off
legend("Br = 25", "Br = 16", "Br = 10", "Br = 6", "Br = 4", "Br = 2", "Br = 0")

```

Graph:



3

Code :

```

Y = linspace(0,1,100);
plot(Y,(0.5-1.3333*Y.^3).^2+4*Y.^2*9,LineWidth=1.5);
xlabel('Y')
ylabel('Ns')
title('Entropy Generation number as a function of Y at different group parameter
for Steady flow between two fixed plates')

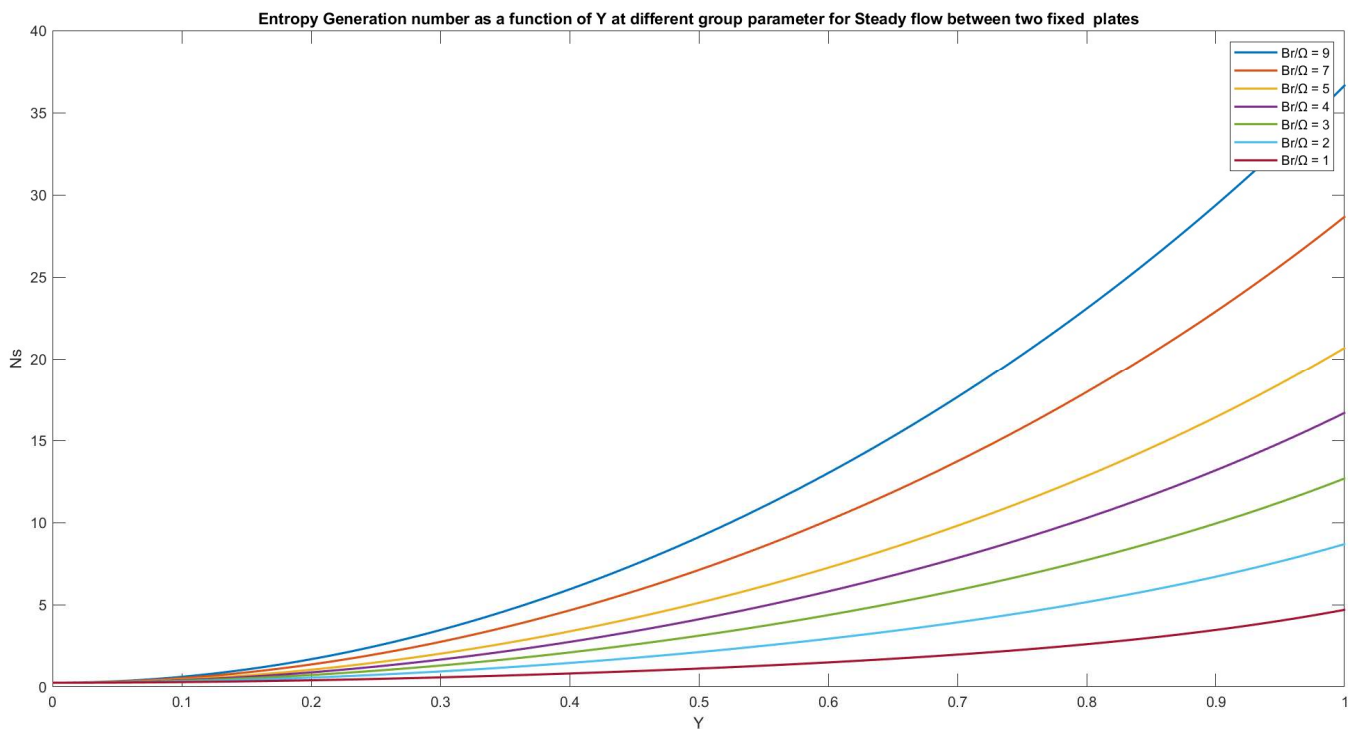
hold on
plot(Y,(0.5-1.3333*Y.^3).^2+4*Y.^2*7,LineWidth=1.5);
plot(Y,(0.5-1.3333*Y.^3).^2+4*Y.^2*5,LineWidth=1.5);
plot(Y,(0.5-1.3333*Y.^3).^2+4*Y.^2*4,LineWidth=1.5);
plot(Y,(0.5-1.3333*Y.^3).^2+4*Y.^2*3,LineWidth=1.5);
plot(Y,(0.5-1.3333*Y.^3).^2+4*Y.^2*2,LineWidth=1.5);
plot(Y,(0.5-1.3333*Y.^3).^2+4*Y.^2*1,LineWidth=1.5);

hold off

legend("Br/Ω = 9", "Br/Ω = 7", "Br/Ω = 5", "Br/Ω = 4", "Br/Ω = 3", "Br/Ω = 2", "Br/Ω = 1")

```

Graph:



4

Code :

```

c1 = 0.167978719;
c2 = 1.08202128;
R = linspace(0,1,10000);

plot(R,(((2*R.*(1+(c2*log(R))-c2))/(c2-1) + (c2*R-R.^3)/(c2-1)).^2 + 4*1*((2*R-
(c2./(R.^2))).^2)./(c1^2),LineWidth=1.5)

xlabel('R')
ylabel('Ns')

title(['Entropy generation number as a function of R for',' Convection in a Round
Tube'])

hold on

plot(R,(((2*R.*(1+(c2*log(R))-c2))/(c2-1) + (c2*R-R.^3)/(c2-1)).^2 + 4*0.8*((2*R-
(c2./(R.^2))).^2)./(c1^2),LineWidth=1.5)

plot(R,(((2*R.*(1+(c2*log(R))-c2))/(c2-1) + (c2*R-R.^3)/(c2-1)).^2 + 4*0.6*((2*R-
(c2./(R.^2))).^2)./(c1^2),LineWidth=1.5)

plot(R,(((2*R.*(1+(c2*log(R))-c2))/(c2-1) + (c2*R-R.^3)/(c2-1)).^2 + 4*0.4*((2*R-
(c2./(R.^2))).^2)./(c1^2),LineWidth=1.5)

plot(R,(((2*R.*(1+(c2*log(R))-c2))/(c2-1) + (c2*R-R.^3)/(c2-1)).^2 + 4*0.3*((2*R-
(c2./(R.^2))).^2)./(c1^2),LineWidth=1.5)

plot(R,(((2*R.*(1+(c2*log(R))-c2))/(c2-1) + (c2*R-R.^3)/(c2-1)).^2 + 4*0.2*((2*R-
(c2./(R.^2))).^2)./(c1^2),LineWidth=1.5)

plot(R,(((2*R.*(1+(c2*log(R))-c2))/(c2-1) + (c2*R-R.^3)/(c2-1)).^2 + 4*0.1*((2*R-
(c2./(R.^2))).^2)./(c1^2),LineWidth=1.5)

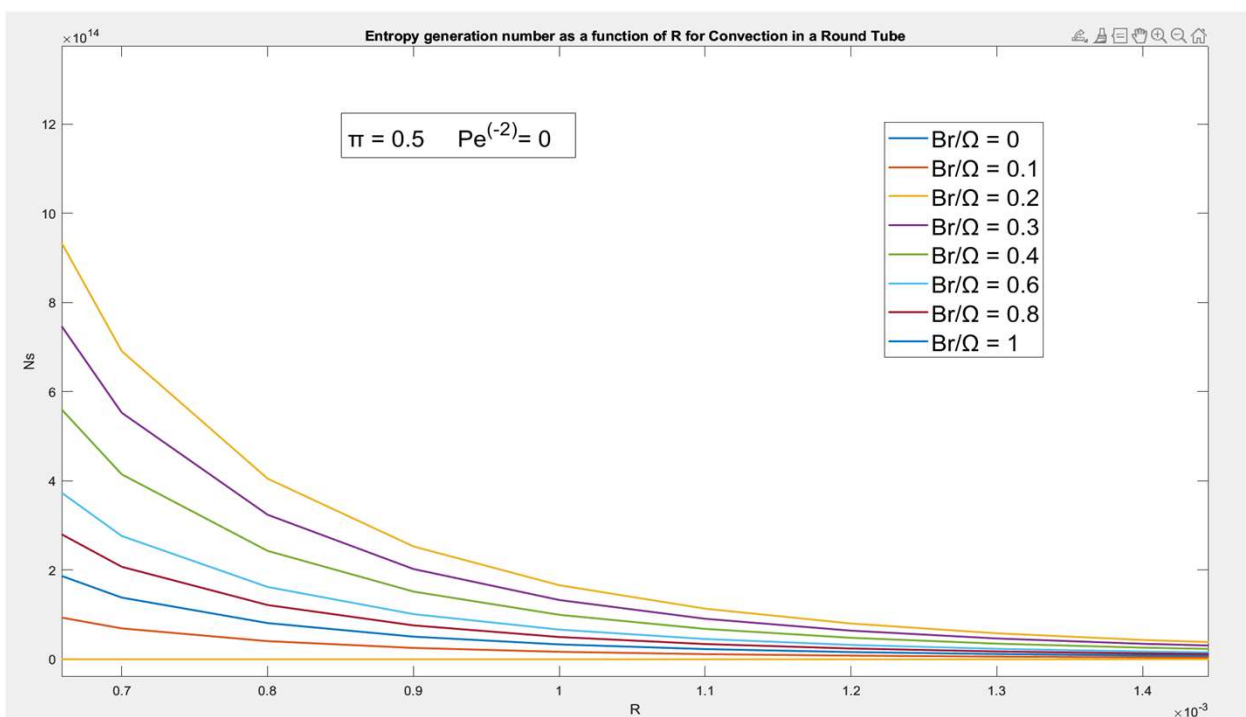
plot(R,(((2*R.*(1+(c2*log(R))-c2))/(c2-1) + (c2*R-R.^3)/(c2-1)).^2 + 4*0*((2*R-
(c2./(R.^2))).^2)./(c1^2),LineWidth=1.5)

hold off

legend("Br/Ω = 0", "Br/Ω = 0.1", "Br/Ω = 0.2", "Br/Ω = 0.3", "Br/Ω = 0.4", "Br/Ω =
0.6", "Br/Ω = 0.8", "Br/Ω = 1")

```

Graph:



5

Code :

```

R = linspace(0,1,100);

plot(R,(0.25./R + R.*(2*log(R./0.5)-1)).^2./(0.25 - 2*log(0.5)+1)+ 0.5*1./((-
0.3465736./R.^2)),LineWidth=1.5)

xlabel('R')
ylabel('Ns')

title('Entropy generation number as a function of R at different group parameter
')

hold on

plot(R,(0.25./R + R.*(2*log(R./0.5)-1)).^2./(0.25 - 2*log(0.5)+1)+ 0.5*0.8./((-
0.3465736./R.^2)),LineWidth=1.5)

plot(R,(0.25./R + R.*(2*log(R./0.5)-1)).^2./(0.25 - 2*log(0.5)+1)+ 0.5*0.6./((-
0.3465736./R.^2)),LineWidth=1.5)

plot(R,(0.25./R + R.*(2*log(R./0.5)-1)).^2./(0.25 - 2*log(0.5)+1)+ 0.5*0.5./((-
0.3465736./R.^2)),LineWidth=1.5)

plot(R,(0.25./R + R.*(2*log(R./0.5)-1)).^2./(0.25 - 2*log(0.5)+1)+ 0.5*0.4./((-
0.3465736./R.^2)),LineWidth=1.5)

plot(R,(0.25./R + R.*(2*log(R./0.5)-1)).^2./(0.25 - 2*log(0.5)+1)+ 0.5*0.3./((-
0.3465736./R.^2)),LineWidth=1.5)

plot(R,(0.25./R + R.*(2*log(R./0.5)-1)).^2./(0.25 - 2*log(0.5)+1)+ 0.5*0.2./((-
0.3465736./R.^2)),LineWidth=1.5)

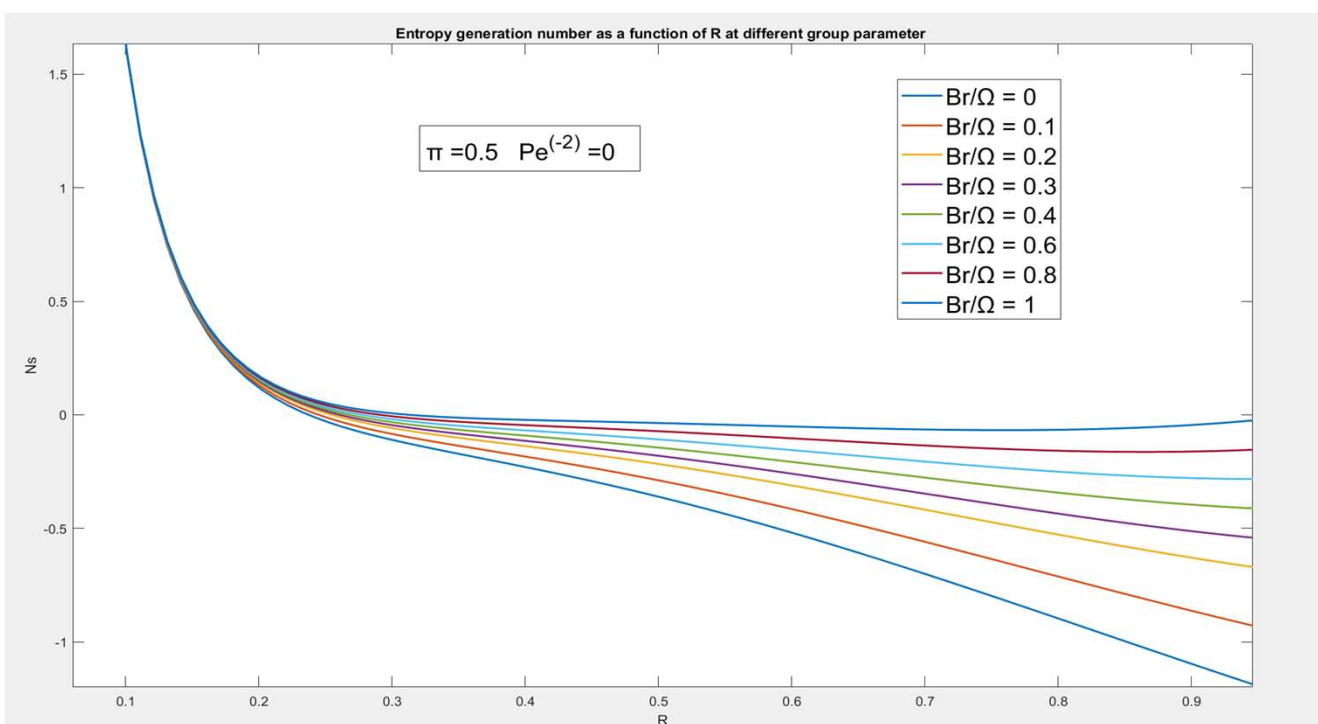
plot(R,(0.25./R + R.*(2*log(R./0.5)-1)).^2./(0.25 - 2*log(0.5)+1)+ 0.5*0.1./((-
0.3465736./R.^2)),LineWidth=1.5)

hold off

legend("Br/Ω = 0", "Br/Ω = 0.1", "Br/Ω = 0.2", "Br/Ω = 0.3", "Br/Ω = 0.4", "Br/Ω =
0.6", "Br/Ω = 0.8", "Br/Ω = 1")

```

Graph:



6

Code :

```

R = linspace(0,1,100);

plot(R,-0.4328085.*log(R)./(R.^3) -0.865617*(1-(0.25./R.^2)./R
+1.4427./R+1*0.00000016.*R.^4),LineWidth=1.5)

xlabel('R')
ylabel('Ns')
title('Entropy generation number as a function of R at different group parameter
')
hold on

plot(R,-0.4328085.*log(R)./(R.^3) -0.865617*(1-(0.25./R.^2)./R
+1.4427./R+0.8*0.00000016.*R.^4),LineWidth=1.5)

plot(R,-0.4328085.*log(R)./(R.^3) -0.865617*(1-(0.25./R.^2)./R
+1.4427./R+0.6*0.00000016.*R.^4),LineWidth=1.5)

plot(R,-0.4328085.*log(R)./(R.^3) -0.865617*(1-(0.25./R.^2)./R
+1.4427./R+0.5*0.00000016.*R.^4),LineWidth=1.5)

plot(R,-0.4328085.*log(R)./(R.^3) -0.865617*(1-(0.25./R.^2)./R
+1.4427./R+0.4*0.00000016.*R.^4),LineWidth=1.5)

plot(R,-0.4328085.*log(R)./(R.^3) -0.865617*(1-(0.25./R.^2)./R
+1.4427./R+0.2*0.00000016.*R.^4),LineWidth=1.5)

plot(R,-0.4328085.*log(R)./(R.^3) -0.865617*(1-(0.25./R.^2)./R
+1.4427./R+0.1*0.00000016.*R.^4),LineWidth=1.5)

plot(R,-0.4328085.*log(R)./(R.^3) -0.865617*(1-(0.25./R.^2)./R
+1.4427./R+0*0.00000016.*R.^4),LineWidth=1.5)

```

Graph:

