**Lab 2**

* Changed Q matrix, didnt appear to affect the script.
* Comparing the plots of the helicopter when adjusting the t vector
* Testing different p values now :
  + Case1\_0\_2 = var1= P = 0.2
  + Case1\_1\_2 = var2 = P = 1.2
  + Case1\_12=var3 = p =12

**New timevector**

* + Case2\_12 = var4=p=12
  + Case2\_1\_2=var5=p=1.2
  + Case2\_0\_2=var6=p=0.2

**NO difference between the two time vectors.**

**Based on the calculated input, R = 1.2 seems to be the best**

**Lab 3**

**Case 1 - Different Q values**

* Case1\_identiy – var1=Identity Q matrix
* Case2 – var2 = [5 1 1 1]
* Case3-var3=[5 1 2 1]
* Case 4-var4 = [3 1 5 1]
* Case 5 – var5 = [3 1 2 3]
* Case 6 – var6 = [15 1 2 3]
* Case 7 – var7 = [100 1 1 1] **– best travel, worst pitch rate**
* Case8 – var8 = [100 1 25 1.5] bad input
* Case 9 – var9 = brysons for Q only = [0.1 1.56 3.3 3.3] poor travel Wrong Bryson!!!
* Case 10 – var10 = modified Bryson [10 1.56 3.3 3.3] maybe a starting point

**Case 2**

* Case2\_1– var21 = Q = I, R = 4 – 4 being brysons
* Case2\_2 – var22 = Q = I, R = 10
* Csae2\_3 – var23 = Q = case10, R = 4
* Case2\_4 -var24 = Q =[50 1.56 3.3 3.3], R = 4, probaly the best so far
* Case 2\_5 var 25 = Q eye[4], R = 4, large deviation in travel
* Case 2\_6 var26 = Q [10 1 5 1] R = 4, not bad

**Case 3, with travel offset**

* Case3\_1 var31 = Q = [10 1 1 1] R = 5 , looks good but deviation 0.2 in travel
* Case 3\_2 var32 = Q =[50 1 5 1] R = 4, the best so far
* Case 3\_3 var 33 = Q = [50 1 1 1] R = 1 maybe even better
* Case 3-4 var 34 Q = [5 5 5 5] R = 4, 0.25 deviation
* Case 3\_5 var 35 Q = [11 1.56 4 4] R = 4
* Case 3\_6 var 36 Q = [20 1.56 4 4] R = 4

**Lab 4 testing**

* Case 1\_ Bryson rule = []
* Case2 = var2 = Q = [25 1 1 1 20 1] R = [1 1] – pretty good
* Case3 = var3 = Q = [25 1 1 1 20 1] R = [1 0.5] – pretty good
* Case 4 – var4 = Q = [10 1 2 9.5 30 100] R = [0.44 4] – elev rate is probably too high, Bryson
* Case5 – var5 = Q = [20 1 2 0.5 30 100] R = [1 4] – better than the last one.
* Case6 – var6 = Q = [20 1 2 0.5 30 100] R = [0.4 0.1]
* Case7 – var7 = Q =eye(20), R = eye(1)
* Case8 – var8 = Q = eye(20) R = eye(5)