%%%%%%%%%%%%%%%%%%%%%%%%%%%% 40deg/m twist %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

Wkg = 0.0342

Wb = 0.0434

mAh = 855.2838

Batnos = 5

Wbnew = 0.0280

ans = 0.0154

Wnew = 0.0496

1st loop

Wkg = 0.0496

S = 0.0375

Wb = 0.0575

mAh = 1.3458e+03

Batnos = 7

Wbnew = 0.0392

ans = 0.0183

Wnew = 0.0678

2nd loop

Wkg = 0.0678

S = 0.0513

Wb = 0.0728

mAh = 1.9734e+03

Batnos = 11

Wbnew = 0.0616

ans = 0.0112

Wnew = 0.0790

3rd loop

Wkg = 0.0790

S = 0.0598

Wb = 0.0818

mAh = 2.3788e+03

Batnos = 13

Wbnew = 0.0728

ans = 0.0090

Wnew = 0.0880

4th loop

Wkg = 0.0880

S = 0.0666

Wb = 0.0887

mAh = 2.7189e+03

Batnos = 15

Wbnew = 0.0840

ans = 0.0047

Wnew = 0.0928

5th loop

Wkg = 0.0928

S = 0.0702

Wb = 0.0923

mAh = 2.9017e+03

Batnos = 16

Wbnew = 0.0896

ans = 0.0027

Wnew = 0.0955

6th loop

Wkg = 0.0955

S = 0.0722

Wb = 0.0944

mAh = 3.0078e+03

Batnos = 17

Wbnew = 0.0952

ans = 8.4593e-04

Wnew = 0.0963

7th loop

Wkg = 0.0952

S = 0.0720

Wb = 0.0941

mAh = 2.9964e+03

Batnos = 17

Wbnew = 0.0952

ans = 0.0011

Wnew = 0.0963

8th loop

S = 0.0728

Wb = 0.0949

mAh = 3.0381e+03

Batnos = 17

Wbnew = 0.0952

ans = 2.6942e-04

Wnew = 0.0965

9th loop

S = 0.0730

Wb = 0.0951

mAh = 3.0487e+03

Batnos = 17

Wbnew = 0.0952

ans = 6.8601e-05

Wnew = 0.0966

10th loop

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%% 10deg/m twist %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

Wkg = 0.0342

Wb = 0.0434

mAh = 742.7716

Batnos = 4

Wbnew = 0.0224

ans = 0.0210

Wnew = 0.0552

1st loop

Wkg = 0.0552

S = 0.0417

Wb = 0.0623

mAh = 1.2944e+03

Batnos = 7

Wbnew = 0.0392

ans = 0.0231

Wnew = 0.0783

2nd loop

Wkg = 0.0783

S = 0.0592

Wb = 0.0812

mAh = 1.9339e+03

Batnos = 11

Wbnew = 0.0616

ans = 0.0196

Wnew = 0.0978

3rd loop

Wkg = 0.0978

S = 0.0740

Wb = 0.0961

mAh = 2.5061e+03

Batnos = 14

Wbnew = 0.0784

ans = 0.0177

Wnew = 0.1155

4th loop

Wkg = 0.1155

S = 0.0874

Wb = 0.1090

mAh = 3.0362e+03

Batnos = 17

Wbnew = 0.0952

ans = 0.0138

Wnew = 0.1293

5th loop

Wkg = 0.1293

S = 0.0978

Wb = 0.1186

mAh = 3.4653e+03

Batnos = 19

Wbnew = 0.1064

ans = 0.0122

Wnew = 0.1415

6th loop

Wkg = 0.1415

S = 0.1070

Wb = 0.1270

mAh = 3.8544e+03

Batnos = 21

Wbnew = 0.1176

ans = 0.0094

Wnew = 0.1510

7th loop

Wkg = 0.1510

S = 0.1142

Wb = 0.1334

mAh = 4.1590e+03

Batnos = 23

Wbnew = 0.1288

ans = 0.0046

Wnew = 0.1556

8th loop

Wkg = 0.1556

S = 0.1177

Wb = 0.1365

mAh = 4.3091e+03

Batnos = 24

Wbnew = 0.1344

ans = 0.0021

Wnew = 0.1577

9th loop

Wkg = 0.1577

S = 0.1192

Wb = 0.1379

mAh = 4.3771e+03

Batnos = 24

Wbnew = 0.1344

ans = 0.0035

Wnew = 0.1611

10th loop

Wkg = 0.1611

S = 0.1219

Wb = 0.1401

mAh = 4.4906e+03

Batnos = 25

Wbnew = 0.1400

ans = 1.4573e-04

Wnew = 0.1613

11th loop

Wkg = 0.1613

S = 0.1220

Wb = 0.1402

mAh = 4.4954e+03

Batnos = 25

Wbnew = 0.1400

ans = 2.4156e-04

Wnew = 0.1615

12th loop

clear all

% W = 0.335920000000000; %in N

S = 0.02584; %in m2

P = 5.49651 %in Watts

Vol = 3.7;

WbyS = 13; %in N/m2

g = 9.830590516507780;

W = WbyS\*S; %in N

Wkg = (W/g) %in kilograms

Wb = (0.5572\*(Wkg^0.7561))

Ws = (0.1137\*(Wkg^1.2667))

We = (1.0861\*(Wkg^0.7233))

mAh = ((P\*(30\*60))/3600)\*(1000/Vol)

Batnos = nearest(mAh/180)

if (Vol==3.7)

Wbnew = Batnos\*(5.6/1000)

elseif (Vol==7.4)

Wbnew = Batnos\*(9/1000)

end

Wsnew = 0.1137\*((Wbnew/0.5572)^(1.2667/0.7561))

Wenew = 1.0861\*((Wbnew/0.5572)^(0.7233/0.7561))

abs(Wb-Wbnew)

abs(Ws-Wsnew)

abs(We-Wenew)

Wnew = (abs(Wb-Wbnew)+abs(Ws-Wsnew)+abs(We-Wenew)+Wkg)

disp("1st loop")

% WbyS = 13; %in N/m2

% Wkg = 0.055152790575260 %in kilograms

% W = (Wkg\*g); %in N

% S = W/WbyS %in m2

% P = 9.57855 %in Watts

% Vol = 3.7;

% g = 9.830590516507780;

% Wb = (0.5572\*(Wkg^0.7561))

% Ws = (0.1137\*(Wkg^1.2667))

% mAh = ((P\*(30\*60))/3600)\*(1000/Vol)

% Batnos = nearest(mAh/180)

% if (Vol==3.7)

% Wbnew = Batnos\*(5.6/1000)

% elseif (Vol==7.4)

% Wbnew = Batnos\*(9/1000)

% end

% abs(Wb-Wbnew)

% Wnew = (abs(Wb-Wbnew)+Wkg)

% disp("2nd loop")

% WbyS = 13; %in N/m2

% Wkg = 0.078255981201146 %in kilograms

% W = (Wkg\*g); %in N

% S = W/WbyS %in m2

% P = 14.3109 %in Watts

% Vol = 3.7;

% g = 9.830590516507780;

% Wb = (0.5572\*(Wkg^0.7561))

% Ws = (0.1137\*(Wkg^1.2667))

% mAh = ((P\*(30\*60))/3600)\*(1000/Vol)

% Batnos = nearest(mAh/180)

% if (Vol==3.7)

% Wbnew = Batnos\*(5.6/1000)

% elseif (Vol==7.4)

% Wbnew = Batnos\*(9/1000)

% end

% abs(Wb-Wbnew)

% Wnew = (abs(Wb-Wbnew)+Wkg)

% disp("3rd loop")

% WbyS = 13; %in N/m2

% Wkg = 0.097826761450126 %in kilograms

% W = (Wkg\*g); %in N

% S = W/WbyS %in m2

% P = 18.545 %in Watts

% Vol = 3.7;

% g = 9.830590516507780;

% Wb = (0.5572\*(Wkg^0.7561))

% Ws = (0.1137\*(Wkg^1.2667))

% mAh = ((P\*(30\*60))/3600)\*(1000/Vol)

% Batnos = nearest(mAh/180)

% if (Vol==3.7)

% Wbnew = Batnos\*(5.6/1000)

% elseif (Vol==7.4)

% Wbnew = Batnos\*(9/1000)

% end

% abs(Wb-Wbnew)

% Wnew = (abs(Wb-Wbnew)+Wkg)

% disp("4th loop")

% WbyS = 13; %in N/m2

% Wkg = 0.115520736063762 %in kilograms

% W = (Wkg\*g); %in N

% S = W/WbyS %in m2

% P = 22.4678 %in Watts

% Vol = 3.7;

% g = 9.830590516507780;

% Wb = (0.5572\*(Wkg^0.7561))

% Ws = (0.1137\*(Wkg^1.2667))

% mAh = ((P\*(30\*60))/3600)\*(1000/Vol)

% Batnos = nearest(mAh/180)

% if (Vol==3.7)

% Wbnew = Batnos\*(5.6/1000)

% elseif (Vol==7.4)

% Wbnew = Batnos\*(9/1000)

% end

% abs(Wb-Wbnew)

% Wnew = (abs(Wb-Wbnew)+Wkg)

% disp("5th loop")

% WbyS = 13; %in N/m2

% Wkg = 0.129286054912801 %in kilograms

% W = (Wkg\*g); %in N

% S = W/WbyS %in m2

% P = 25.643 %in Watts

% Vol = 3.7;

% g = 9.830590516507780;

% Wb = (0.5572\*(Wkg^0.7561))

% Ws = (0.1137\*(Wkg^1.2667))

% mAh = ((P\*(30\*60))/3600)\*(1000/Vol)

% Batnos = nearest(mAh/180)

% if (Vol==3.7)

% Wbnew = Batnos\*(5.6/1000)

% elseif (Vol==7.4)

% Wbnew = Batnos\*(9/1000)

% end

% abs(Wb-Wbnew)

% Wnew = (abs(Wb-Wbnew)+Wkg)

% disp("6th loop")

% WbyS = 13; %in N/m2

% Wkg = 0.141532665356000 %in kilograms

% W = (Wkg\*g); %in N

% S = W/WbyS %in m2

% P = 28.5222 %in Watts

% Vol = 3.7;

% g = 9.830590516507780;

% Wb = (0.5572\*(Wkg^0.7561))

% Ws = (0.1137\*(Wkg^1.2667))

% mAh = ((P\*(30\*60))/3600)\*(1000/Vol)

% Batnos = nearest(mAh/180)

% if (Vol==3.7)

% Wbnew = Batnos\*(5.6/1000)

% elseif (Vol==7.4)

% Wbnew = Batnos\*(9/1000)

% end

% abs(Wb-Wbnew)

% Wnew = (abs(Wb-Wbnew)+Wkg)

% disp("7th loop")

% WbyS = 13; %in N/m2

% Wkg = 0.150982424947345 %in kilograms

% W = (Wkg\*g); %in N

% S = W/WbyS %in m2

% P = 30.7767 %in Watts

% Vol = 3.7;

% g = 9.830590516507780;

% Wb = (0.5572\*(Wkg^0.7561))

% Ws = (0.1137\*(Wkg^1.2667))

% mAh = ((P\*(30\*60))/3600)\*(1000/Vol)

% Batnos = nearest(mAh/180)

% if (Vol==3.7)

% Wbnew = Batnos\*(5.6/1000)

% elseif (Vol==7.4)

% Wbnew = Batnos\*(9/1000)

% end

% abs(Wb-Wbnew)

% Wnew = (abs(Wb-Wbnew)+Wkg)

% disp("8th loop")

% WbyS = 13; %in N/m2

% Wkg = 0.155595181023236 %in kilograms

% W = (Wkg\*g); %in N

% S = W/WbyS %in m2

% P = 31.8872 %in Watts

% Vol = 3.7;

% g = 9.830590516507780;

% Wb = (0.5572\*(Wkg^0.7561))

% Ws = (0.1137\*(Wkg^1.2667))

% mAh = ((P\*(30\*60))/3600)\*(1000/Vol)

% Batnos = nearest(mAh/180)

% if (Vol==3.7)

% Wbnew = Batnos\*(5.6/1000)

% elseif (Vol==7.4)

% Wbnew = Batnos\*(9/1000)

% end

% abs(Wb-Wbnew)

% Wnew = (abs(Wb-Wbnew)+Wkg)

% disp("9th loop")

% WbyS = 13; %in N/m2

% Wkg = 0.157678442124407 %in kilograms

% W = (Wkg\*g); %in N

% S = W/WbyS %in m2

% P = 32.3908 %in Watts

% Vol = 3.7;

% g = 9.830590516507780;

% Wb = (0.5572\*(Wkg^0.7561))

% Ws = (0.1137\*(Wkg^1.2667))

% mAh = ((P\*(30\*60))/3600)\*(1000/Vol)

% Batnos = nearest(mAh/180)

% if (Vol==3.7)

% Wbnew = Batnos\*(5.6/1000)

% elseif (Vol==7.4)

% Wbnew = Batnos\*(9/1000)

% end

% abs(Wb-Wbnew)

% Wnew = (abs(Wb-Wbnew)+Wkg)

% disp("10th loop")

% WbyS = 13; %in N/m2

% Wkg = 0.161141135603567 %in kilograms

% W = (Wkg\*g); %in N

% S = W/WbyS %in m2

% P = 33.2307 %in Watts

% Vol = 3.7;

% g = 9.830590516507780;

% Wb = (0.5572\*(Wkg^0.7561))

% Ws = (0.1137\*(Wkg^1.2667))

% mAh = ((P\*(30\*60))/3600)\*(1000/Vol)

% Batnos = nearest(mAh/180)

% if (Vol==3.7)

% Wbnew = Batnos\*(5.6/1000)

% elseif (Vol==7.4)

% Wbnew = Batnos\*(9/1000)

% end

% abs(Wb-Wbnew)

% Wnew = (abs(Wb-Wbnew)+Wkg)

% disp("11th loop")

% WbyS = 13; %in N/m2

% Wkg = 0.161286869395994 %in kilograms

% W = (Wkg\*g); %in N

% S = W/WbyS %in m2

% P = 33.2662 %in Watts

% Vol = 3.7;

% g = 9.830590516507780;

% Wb = (0.5572\*(Wkg^0.7561))

% Ws = (0.1137\*(Wkg^1.2667))

% mAh = ((P\*(30\*60))/3600)\*(1000/Vol)

% Batnos = nearest(mAh/180)

% if (Vol==3.7)

% Wbnew = Batnos\*(5.6/1000)

% elseif (Vol==7.4)

% Wbnew = Batnos\*(9/1000)

% end

% abs(Wb-Wbnew)

% Wnew = (abs(Wb-Wbnew)+Wkg)

% disp("12th loop")