Contents


```
close all;
clear all;

filename = 'BatCtime.csv';
filename3 = 'Marker2Ctime.csv';
filename4 = 'Marker1Ctime.csv';

M = csvread(filename,1);
timestamp = M(1:end,1);
B_C1 = M(1:end,2);
B_C2 = M(1:end,3);
time1 = datetime(timestamp, 'convertfrom','epochtime');

M3 = csvread(filename3,1);
timestamp3 = M3(:,1);
CtimeM2_C1 = M3(:,2);
CtimeM2_C2 = M3(:,3);
time3 = datetime(timestamp3, 'convertfrom','epochtime');

M4 = csvread(filename4,1);
timestamp4 = M4(:,1);
CtimeM1_C1 = M4(:,2);
CtimeM1_C2 = M4(:,3);
time4 = datetime(timestamp4, 'convertfrom','epochtime');
```

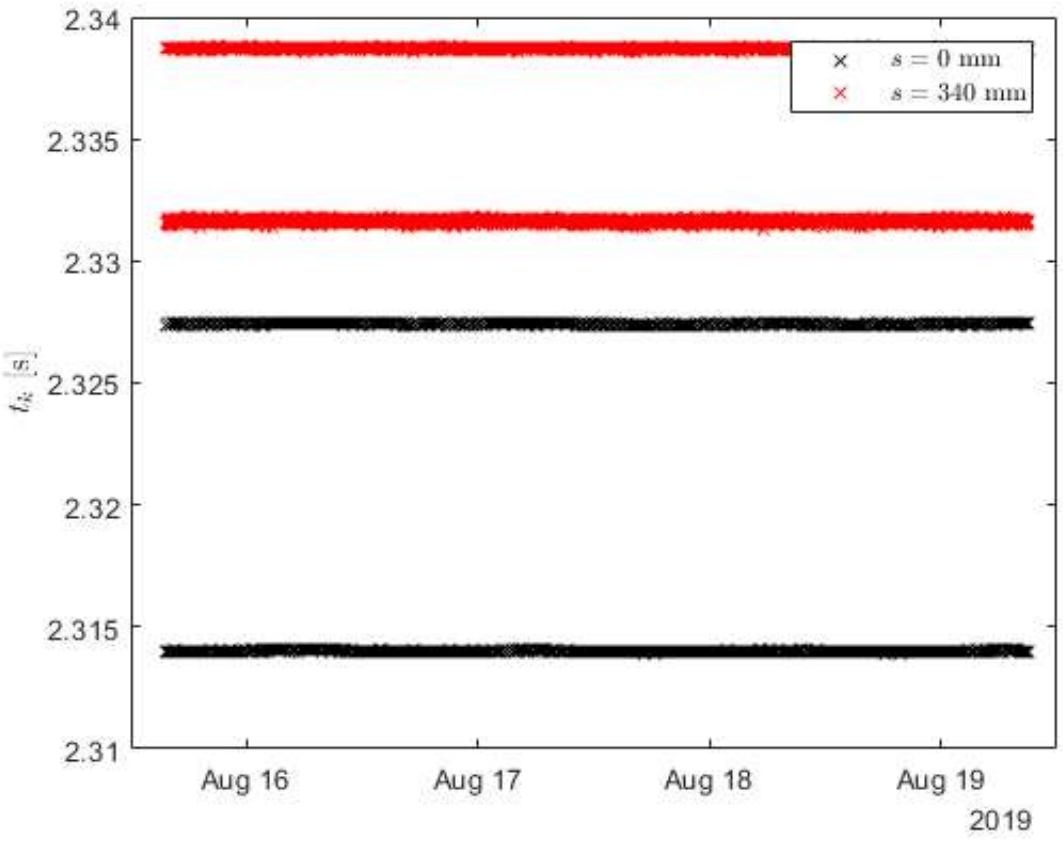
Marker repeatability

```
 s=0;
  for l=1:length(timestamp4)
     if (CtimeM1_C1(l) < 0.5355 && CtimeM1_C1(l) >0.5331) && (CtimeM1_C2(l)< 0.6 && Ctim
eM1_C2(l) > 0.5331)
            s=s+1;
            CtimeM1_C1f(s)=CtimeM1_C1(l);
            CtimeM1_C2f(s)=CtimeM1_C2(l);
            time4f(s)=time4(l);
     end;
 end;
 s=0;
   for l=1:length(timestamp3)
     if (CtimeM2_C1(l) < 2.4 && CtimeM2_C1(l) > 2.3) && (CtimeM2_C2(l)< 2.4 && CtimeM2_C
2(l) > 2.3)
            s=s+1;
            CtimeM2_C1f(s)=CtimeM2_C1(l);
            CtimeM2_C2f(s)=CtimeM2_C2(l);
            time3f(s)=time3(l);
     end;
 end;

%

s1 = sprintf('Number of M2 points: %d', length(time3f));
 figure; plot(time3f, CtimeM2_C1f, 'kx', time3f, CtimeM2_C2f, 'rx'); legend('$s=0$~mm',
```

```
'$s=340$~mm','interpreter','latex');  ylabel('$t_k$ [s]','interpreter','latex');
```




```
 filename5 = 'output.csv';
M5 = csvread(filename5);
cycle_1 = M5(1,:);
cycle_2 = M5(2,:);
cycle_3 = M5(3,:);

%  figure; plot(cycle_1); hold on; plot(cycle_2); hold on; plot(cycle_3);  legend('PBMDE
C', 'HMMD1', 'PMD3'); title('Cycles'); ylabel('Gauss');
Bdot_PBMDEC = (cycle_2(2000)-cycle_2(1000))/1e4;
Bdot_HMMD1_1 = (cycle_3(400)-cycle_3(300))*10;
Bdot_HMMD1_2 = (cycle_3(2200)-cycle_3(2100))*10;

  dt_M1C1=std(CtimeM1_C1f)*Bdot_HMMD1_1;
  dt_M1C2=std(CtimeM1_C2f)*Bdot_HMMD1_1;

 dt_M2C1=range(CtimeM2_C1f);
 dt_M2C2=range(CtimeM2_C2f);
  s2 = sprintf('Central sensor setup high field marker: %f s', dt_M2C1);
s3 = sprintf('Lateral sensor setup high field marker: %f s', dt_M2C2);
s4 = sprintf('Central sensor setup low field marker: %f G', dt_M1C1);
s5 = sprintf('Lateral sensor setup low field marker: %f G', dt_M1C2);
```

Display

```
disp('____________________REPORT_____________________________________');
disp(s1); disp(s2); disp(s3); disp(s4); disp(s5);
disp('_____________________________________________________________');
```

```
____________________REPORT_____________________________________
Number of M2 points: 24030
Central sensor setup high field marker: 0.013567 s
Lateral sensor setup high field marker: 0.007513 s
Central sensor setup low field marker: 0.147162 G
Lateral sensor setup low field marker: 0.058701 G
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```

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