

ALLEGATO B
“Scour Profile”

```
clear
X = xlsread ('C:\Users\Seven\Desktop\PcV\corrected Final\Sand\S3h.xlsx',1,'A:A');
Y = xlsread ('C:\Users\Seven\Desktop\PcV\corrected Final\Sand\S3h.xlsx',1,'B:B');
Z = xlsread ('C:\Users\Seven\Desktop\PcV\corrected Final\Sand\S3h.xlsx',1,'C:C');
Deltax=10;
X1 (1,1)=min (X)+10;
i=2;
j=1;
k=1;
l=1;
while i<((max (X)-10-min (X)-10)/Deltax)
    X1 (i,1)=X1 (i-1,1)+Deltax;
    Xmean (i-1,1)=(X1 (i-1,1)+X1 (i,1))/2;
    while k<numel (X)
        if X1 (i-1,1)<X (k)&& X (k)<X1 (i,1)
            X2 (j)=X (k);
            Y2 (j)=Y (k);
            Z2 (j)=Z (k);
            if -5<Y (k)&& Y (k)<5
                Zcentre (l,1)=Z (k);
                l=l+1;
            end
            j=j+1;
        end
        k=k+1;
    end
    Zmean (i-1,1)=mean (Z2);
    Zmax (i-1,1)=max (Z2);
    Zmin (i-1,1)=min (Z2);
    Zcent (i-1,1)=mean (Zcentre);
    m=1;
    while m<j-1
        if Z2 (m)==max (Z2)
            Ymax (i-1,1)=Y2 (m);
        end
        if Z2 (m)==min (Z2)
            Ymin (i-1,1)=Y2 (m);
        end
        m=m+1;
    end
    clear X2
    clear Y2
    clear Z2
    clear Zcentre
    j=1;
    k=1;
    l=1;
```

```
i=i+1  
end
```

```
Header={'Xmean','Zmean','Zmin','Zmax','Zcent','Ymin','Ymax'};  
xlswrite('C:\Users\Seven\Desktop\Results.xlsx', Header, 1, 'A1')  
xlswrite('C:\Users\Seven\Desktop\Results.xlsx', Xmean, 1, 'A2')  
xlswrite('C:\Users\Seven\Desktop\Results.xlsx', Zmean, 1, 'B2')  
xlswrite('C:\Users\Seven\Desktop\Results.xlsx', Zmin, 1, 'C2')  
xlswrite('C:\Users\Seven\Desktop\Results.xlsx', Zmax, 1, 'D2')  
xlswrite('C:\Users\Seven\Desktop\Results.xlsx', Zcent, 1, 'E2')  
xlswrite('C:\Users\Seven\Desktop\Results.xlsx', Ymin, 1, 'F2')  
xlswrite('C:\Users\Seven\Desktop\Results.xlsx', Ymax, 1, 'G2')
```

```
G1=plot(Xmean, Zmean);  
set(G1,'Color','red')  
hold on  
G2=plot(Xmean, Zmean);  
set(G2,'Color','black')  
hold on
```

```
legend('Mean1h','Mean3h')  
xlabel('X (mm)')  
ylabel('Z (mm)')
```