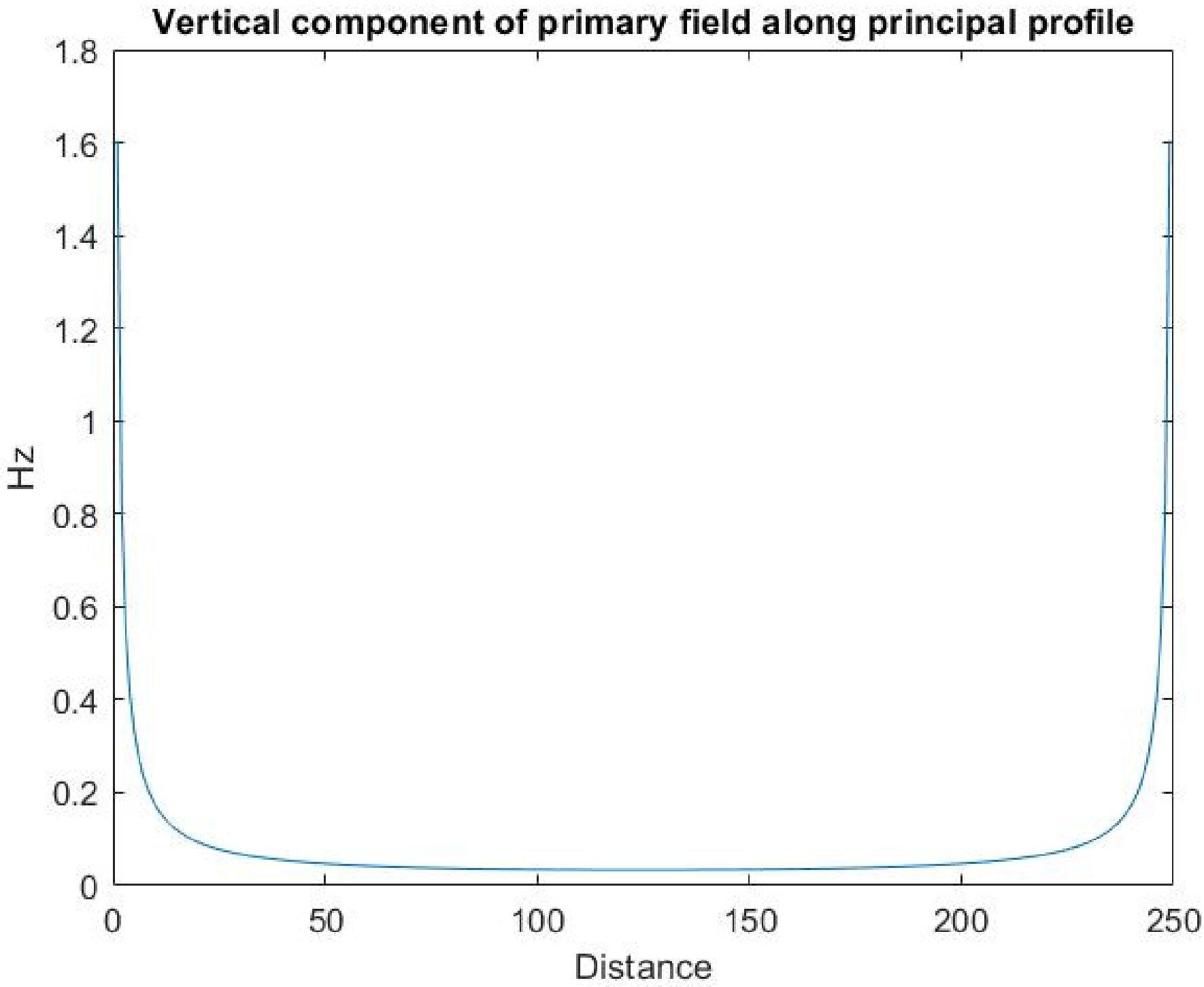
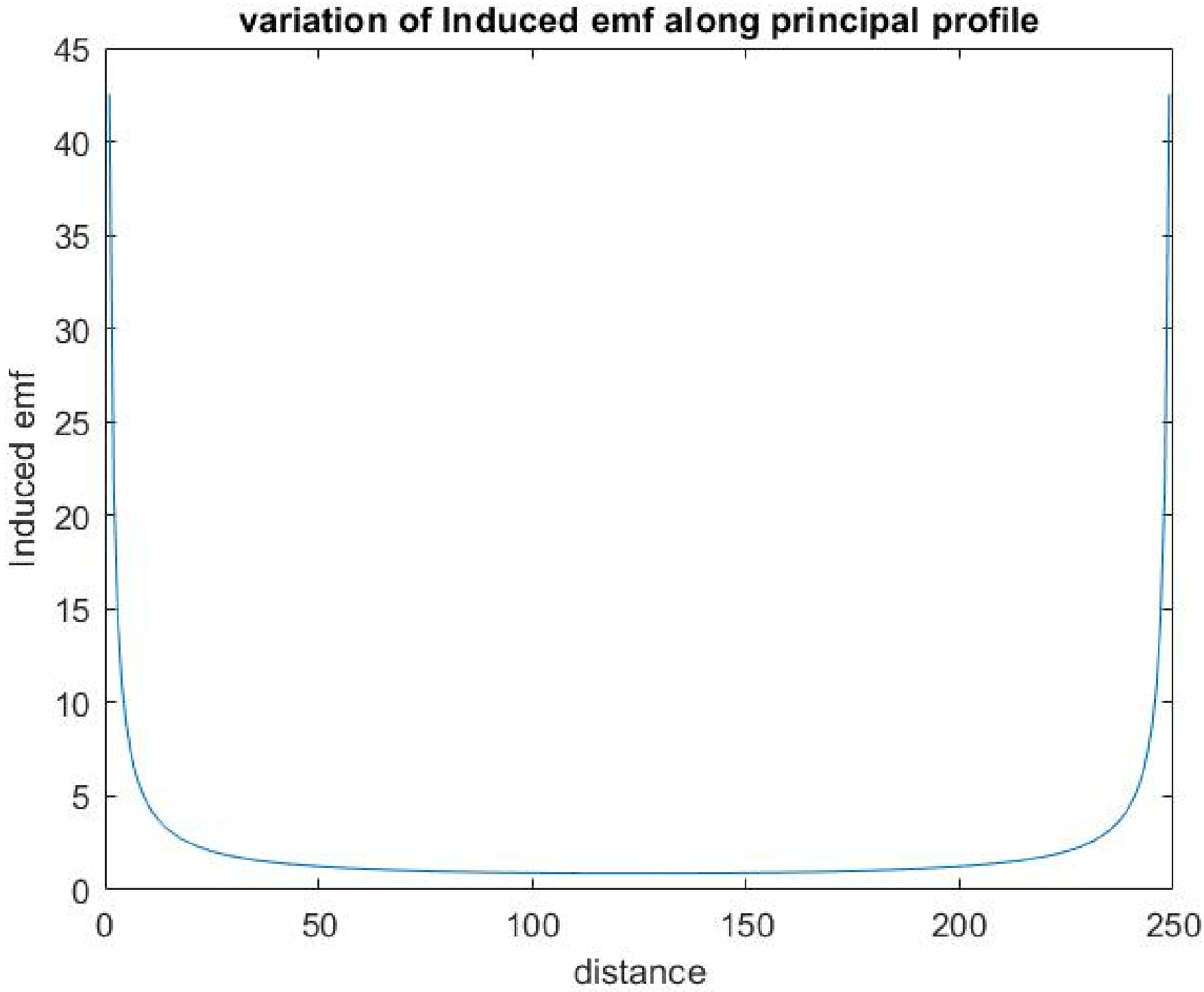
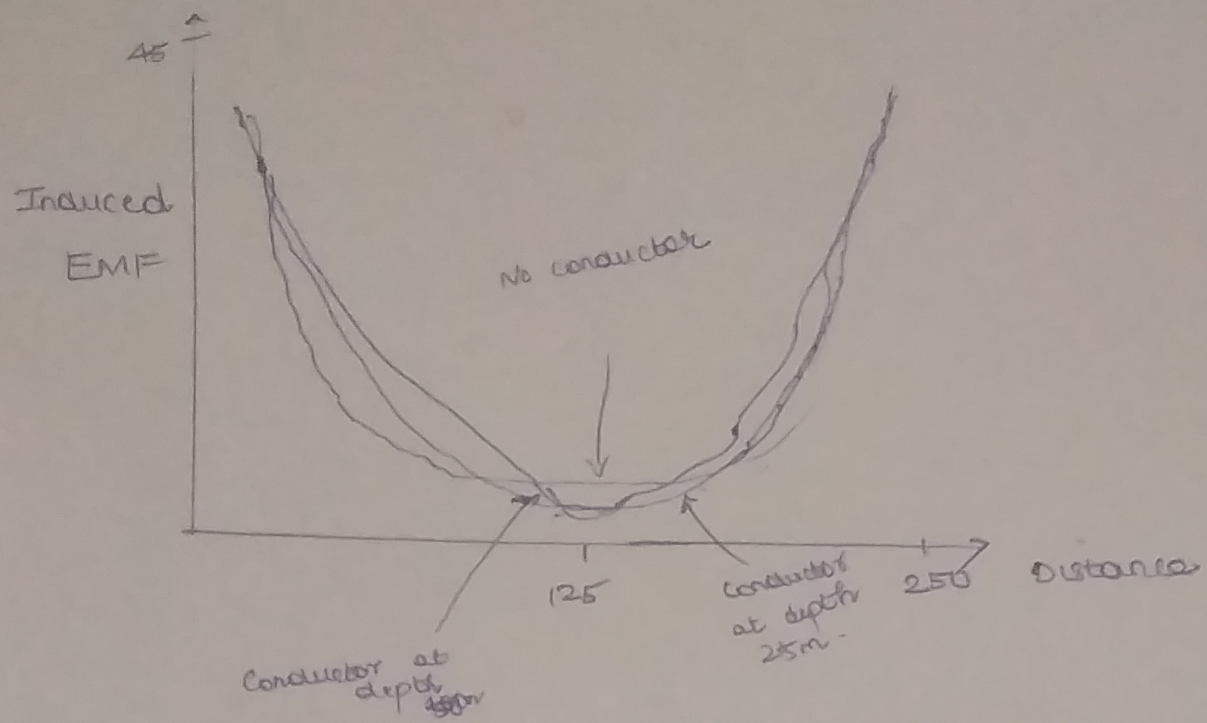
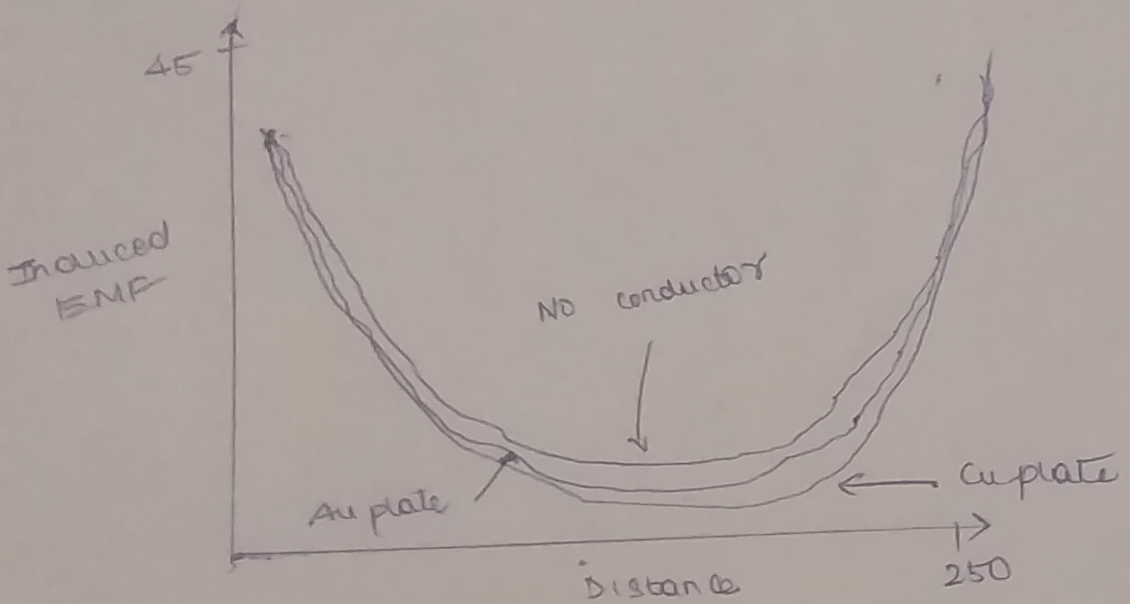
```
%18EX20030 UTKARSH JAISWAL
clear all
close all
clc
l=250;
h=300;
i=10;
H(h-1,l-1)=0;
a = linspace(1,l-1,l-1);
b = linspace(1,h-1,h-1);
for x=1:h-1
for y=1:l-1
r1 = (((x)^2 + y^2))^0.5;
r2 = (((h-x)^2 + y^2))^0.5;
r3 = (((h-x)^2 + (l-y)^2))^0.5;
r4 = ((x^2 + (l-y)^2))^0.5;
a1 = x*y;
a2 = (h-x)*y;
a3 = (h-x)*(l-y);
a4 = x*(l-y);
H(x,y)=(i/(4*pi))*((r1/a1)+(r2/a2)+(r3/a3)+(r4/a4));
end
end
Y=H(150,:);
plot(a,Y)
title('Vertical component of primary field along principal profile')
xlabel('Distance')
ylabel('Hz')
```


Vertical component of primary field along principal profile
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Hz
0
50
100
150
200
250
Distance

```
title('variation of Induced emf along principal profile')
xlabel('distance')
ylabel('Induced emf')
```


variation of Induced emf along principal profile
Induced emf
distance
0
5
10
15
20
25
30
35
40
45
0
50
100
150
200
250

Utkarsh Jaiswal
18EX20030