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function HD = Helmholtz_loopK()

Theta = linspace(0,2*pi,1000);

% Start m loop (4 values of h)
for m = 1:4
h(m) = 0.2*(m-1);

%Start n loop (computation for x dependence)
for n = 1:1001
x(n) = (n-1)/1000;

%Calculations for First Coil
Numer1 = (x(n)^2 + 1 + h(m)^2 - 2*h(m).*cos(Theta)).^(-1.5);
B1x1 = -Numer1;
B1x2 = h(m)*cos(Theta).*Numer1;
B1x = B1x1 + B1x2;
B1y = -x(n).*cos(Theta).*Numer1;

%Calculations for Second Coil
Numer2 = ((1-x(n))^2 + 1 + h(m)^2 - 2*h(m).*cos(Theta)).^(-1.5);
B2x1 = -Numer2;
B2x2 = h(m)*cos(Theta).*Numer2;
B2x = B2x1 + B2x2;
B2y = -(1-x(n)).*cos(Theta).*Numer2;

%Sum Both Coils
Bx = B1x + B2x;
By = B1y + B2y;

Integral_Bx(m,n) = trapz(Theta,Bx)/(2*pi);
Integral_By(m,n) = trapz(Theta,By)/(2*pi);
Bcplx(m,n) = Integral_Bx(m,n) + i*Integral_By(m,n);
Bmag(m,n) = abs(Bcplx(m,n));
Anglerad(m,n) = atan(Integral_By(m,n)./Integral_Bx(m,n));
Angledeg(m,n) = Anglerad(m,n)*180/pi;

%END n LOOP
end

%END m LOOP
end

subplot(2,2,1);
plot(x,Bmag);
title('|B| vs. x');
legend('h = 0', 'h = 0.2', 'h = 0.4', 'h = 0.6', 'location', 'north');
xlabel('x between coils');
ylabel('|B|');

subplot(2,2,2);
plot(x,Integral_Bx);
title('Bx vs. x');
xlabel('x between coils');
ylabel('Bx');

subplot(2,2,3);
plot(x,Integral_By);
title('By vs. x');

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xlabel('x between coils');
ylabel('By');

subplot(2,2,4);
plot(x,Angledeg);
title('Atan(By/Bx) in deg vs. x');
xlabel('x between coils');
ylabel('arctan(By/Bx) in deg');
return
```