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Course:B.Sc(H) Physics Sem 5

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Problem 1 Part 1:Using E=-13.595599eV

SOURCE CODE:

clc

clear

clf

function dy=f(r, x)

e=3.795; m=0.511\*10^6; h=1973;

dy(1)=x(2)

dy(2)=(2\*m/(h\*h))\*(-((e\*e)/r)+13.595599)\*x(1)

endfunction

r=0.01:0.01:4

u= ode([0.01;1],0.01,r,f);

plot(r,u(1,:))

xlabel('r',"fontsize",4);ylabel('u(r)',"fontsize",4)

title(" Cuve for solution of s-wave Scrodinger wave equation for the ground state of the H atom ","fontsize",2)

OUTPUT:

