**Matlab Source Code**

%Non-uniform grid to capture large gradient near sphere

r = [0.5 0.513 0.6 0.85 1.3 2.1 3.3 4.9 7.1 10];

dr = diff(r);

A = zeros(10);

%Assemble matrix for finite difference operator 1/r \* d^2/dr^2(rT)

for i=2:9

A(i,i-1) = r(i-1)/(r(i)\*dr(i-1)\*dr(i));

A(i,i) = (-2\*r(i))/(r(i)\*dr(i-1)\*dr(i));

A(i,i+1) = r(i+1)/(r(i)\*dr(i-1)\*dr(i));

end

%Apply BCs

A(1,1) = 1;

A(10,10) = 1;

F = zeros(10,1);

F(1)= 100;

F(10)= 10;

%Calculate solution

T=A\F

