Lagrangian particle tracking coupled with Navier-Stokes equations

Day:4

Worksheet

1. Write a code to implement bilinear interpolation.
   f(1,1) = 5; f(2,1) = 7; f(1,2) = 8; f(2,2): 10
   Find the interpolated value of f(x,y) at (1.67,1.28)

2. Interpolate the following velocity field at (1.1,1.54)
u_x = 0.5*sin(x)cos(y),
u_y = 0.5*cos(x)sin(y),
Grid points are given as: (1,1);(2,1);(1,2),(2,2)

3. Using this above result find the particle position(tracer) for time 1 to 10 seconds at an interval of 1sec. Take initial particle position as (0.5, 0.5)