```
Buoy = set(Buoy,'Fixed',0);          %Set free to move
Buoy = set(Buoy,'mass', 2050);       %Set mass in kg
Buoy = set(Buoy,'S',5.0);            %Set waterplane area in m^2
Buoy = set(Buoy,'disp',2.0);         %Set displacement in m^3;
Buoy = set(Buoy,'g',grav);           %Set grav. acceleration constant
Buoy = set(Buoy,'x0',[0 0 0]);       %Equilibrium Pos. in global coord.
Buoy = set(Buoy,'xG',[0 0 -0.38]);   %Set center of gravity in meters
Buoy = set(Buoy,'xB',[0 0 -0.22]);   %Set center of buoyancy in meters
Buoy = set(Buoy,'S11',1.92,'S22',1.92);  %S11 = S22 = 1.92 m^4
I = zeros(3);
I(1,1) = 702.6; I(2,2) = 702.6; I(3,3) = 588.7;
Buoy = set(Buoy,'I',I);              %Set moments of inertial
clear I;
Buoy = set(Buoy,'Area',[1.935 1.935 4.9]); %Set submerged proj. area in m^2
Buoy = set(Buoy,'Cd',[10.0 1.5 1]);  %Set drag coefficients (3 directions)
Buoy = set(Buoy,'AreaW',[.875 .875 0]); %Set area subject to wind forcing
Buoy = set(Buoy,'CdW',[1.5 1.5 0]);  %Set wind drag coefficients
```

The frequency domain hydrodynamic coefficients as generated from WAMIT are read and the infinite frequency added mass coefficients are assigned to the buoy RigidBody object. The function "ReadWamitFD" used here takes a filename as an argument and returns a structure containing the needed data read from the file.

```
%Read Frequency Domain Hydrodynamic Data from file.
filename = ['WAMIT_Results\SingleBodyExample' ];
disp('Reading frequency domain hydrodynamic coefficients');
FD_coefs = ReadWamitFD(filename);
for i = 1:6
   for j = 1:6
      mu_inf(i,j) = rho*FD_coefs.X{i,j}(2);
   end
end
Buoy = set(Buoy,'mu_inf',mu_inf);
clear mu_inf;
```

The impulse response functions that represent the floating bodies wave-hydrodynamic behavior is read and computed by the function "ComputeWamitIRF_coefs".

```
%Compute Impulse Response Functions from Frequency Domain Results
disp('Computing impulse response functions');
L = ComputeWamitIRF_coefs(filename);
```

The incident wave profile is computed next by using the IncWave object. In this example, a monochromatic wave-profile is chosen, with a period of 8 seconds. The time-steps that the wave elevation is computed at is generated by the "Buoy" object, ensuring that the time-steps of the incident wave profile match that of the solution. Because the forces on the body due to the incident wave persist after the peak of the wave has passed the centerline of the body, a longer incident wave profile is needed than the length of the simulation. The time specification in the call to "eta" reflects this.