```matlab
 1 %%This class generates a plot of a Brownian sheet%%
 2 %%written by Tim Jaschek as a part of his bachelor thesis%%
 3
 4 %%Used to generate FIGURE 7 %%
 5 %%...to generate it, type the following in your MATLAB command:
 6 %%Sheet;
 7 %%Sheet.plotit();
 8 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
 9
10 classdef Sheet
11    properties (Constant)
12        N = 500;
13        n = 200;
14    end
15    methods (Static)
16        function lam = sqlambda(i,j)
17            lam = 4 / ((2*j-1)*(2*i-1) * pi^2);
18        end
19        function ph = phi(i,j)
20            ph = zeros(Sheet.N,Sheet.N);
21            for k=1:Sheet.N
22                for l=1:Sheet.N
23                    ph(k,l) = 2*sin((i-0.5)*pi*k/Sheet.N)*sin((j-↙
0.5)*pi*l/Sheet.N);
24                end
25            end
26        end
27        function plotit()
28            BS = zeros(Sheet.N,Sheet.N);
29            BS2 = zeros(Sheet.N,Sheet.N);
30            xi = randn(1,Sheet.n^2);
31            figure
32            for i=1:5
33                for j=1:5
34                    lam = Sheet.sqlambda(i,j);
35                    phi = Sheet.phi(i,j);
36                    BS2 = BS2 + lam*phi*xi(Sheet.n*(i-1)+j);
37                end
38                i
39            end
40            subplot(3,1,1);
41            surf(linspace(1/Sheet.N,1,Sheet.N),linspace(1/Sheet.N,1,↙
Sheet.N),BS2,'edgealpha','0');
42            colormap jet
```

```matlab
43              tic;
44              for i=1:Sheet.n
45                  for j=1:Sheet.n
46                      lam = Sheet.sqlambda(i,j);
47                      phi = Sheet.phi(i,j);
48                      BS = BS + lam*phi*xi(Sheet.n*(i-1)+j);
49                  end
50                  i
51              end
52              toc
53              subplot(3,1,[2,3])
54              surf(linspace(1/Sheet.N,1,Sheet.N),linspace(1/Sheet.N,1,↙
Sheet.N),BS,'edgealpha','0');
55              colormap jet
56          end
57      end
58  end
59
```