

```

1 %%This Programm generates a Plot for different Kernels and ✓
partial%%
2 %%sums of Mercer's series for the covariance function%%
3 %%written by Tim Jaschek as a part of his bachelor thesis%%
4
5 %%This Programm is used to generate FIGURE 1 in the thesis%%
6 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
7
8 %load the class Kernels
9 Kernels;
10
11 %Parameter for accuracy
12 N=16;
13
14 figure
15 for i=1:3;
16     Mat = Kernels.KMat(i,N);
17     [lambda,Phi] = Kernels.trapez_Sceme(Mat);
18     for j=1:3;
19         K=Kernels.MercerApprox(lambda,Phi,j+(j-1)^2);
20         subplot(4,3,i+3*(j-1));
21         surfc(linspace(0,1,N+2),linspace(0,1,N+2), ✓
K, 'edgealpha', '1');
22         if j == 1
23             if i ==1
24                 title('K(s,t)=min(s,t) ');
25                 zlabel('n=1');
26             elseif i ==2
27                 title('K(s,t)=min(s,t) - st');
28             else
29                 title('K(s,t)=exp(-|s-t|)');
30             end
31         elseif j== 2
32             if i == 1
33                 zlabel('n=3');
34             end
35         else
36             if i == 1
37                 zlabel('n=7');
38             end
39         end
40     end
41     subplot(4,3,i+9);
42     surfc(linspace(0,1,N+2),linspace(0,1,N+2),Mat, 'edgealpha', '1');

```

```
43     if i == 1
44         xlabel('analytic');
45     end
46 end
47
48
49
50
```