

Appendix 2.3 Matlab (Version 2010a ©) code for T-S-K (E2)

```
1  [System]
2  Name='FIS_Strategies_1_to_7_Sugeno'
3  Type='sugeno'
4  Version=2.0
5  NumInputs=4
6  NumOutputs=1
7  NumRules=10
8  AndMethod='prod'
9  OrMethod='probor'
10 ImpMethod='prod'
11 AggMethod='sum'
12 DefuzzMethod='wtsum'
13
14 [Input1]
15 Name='Temperature'
16 Range=[0 1]
17 NumMFs=5
18 MF1='Low':'trimf',[-0.25 0 0.25]
19 MF2='Low-Medium':'trimf',[0 0.25 0.5]
20 MF3='Medium':'trimf',[0.25 0.5 0.75]
21 MF4='Medium-High':'trimf',[0.5 0.75 1]
22 MF5='High':'trimf',[0.75 1 1.25]
23
24 [Input2]
25 Name='Precipitation'
26 Range=[0 1]
27 NumMFs=5
28 MF1='Low':'trimf',[-0.25 0 0.25]
29 MF2='Low-Medium':'trimf',[0 0.25 0.5]
30 MF3='Medium':'trimf',[0.25 0.5 0.75]
31 MF4='Medium-High':'trimf',[0.5 0.75 1]
32 MF5='High':'trimf',[0.75 1 1.25]
33
34 [Input3]
35 Name='GFF'
36 Range=[0 1]
37 NumMFs=5
38 MF1='Low':'trimf',[-0.25 0 0.25]
39 MF2='Low-Medium':'trimf',[0 0.25 0.5]
40 MF3='Medium':'trimf',[0.25 0.5 0.75]
41 MF4='Medium-High':'trimf',[0.5 0.75 1]
42 MF5='High':'trimf',[0.75 1 1.25]
43
44 [Input4]
45 Name='Altitude'
46 Range=[0 1]
47 NumMFs=5
```

```
48 MF1='Low': 'trimf', [-0.25 0 0.25]
49 MF2='Low-Medium': 'trimf', [0 0.25 0.5]
50 MF3='Medium': 'trimf', [0.25 0.5 0.75]
51 MF4='Medium-High': 'trimf', [0.5 0.75 1]
52 MF5='High': 'trimf', [0.75 1 1.25]
53
54 [Output1]
55 Name='Strategy'
56 Range=[0 1]
57 NumMFs=1
58 MF1='S-R': 'constant', [2]
59
60 [Rules]
61 5 0 1 0, 1 (1) : 1
62 0 1 0 0, 1 (0.75) : 1
63 0 2 0 0, 1 (0.75) : 1
64 0 3 0 0, 1 (0.75) : 1
65 0 1 0 0, 1 (0.25) : 1
66 0 2 0 0, 1 (0.25) : 1
67 0 3 0 0, 1 (0.25) : 1
68 0 4 0 0, 1 (0.25) : 1
69 0 0 0 1, 1 (1) : 1
70 0 0 0 2, 1 (1) : 1
```