

"The following command calls the Combinatorica package included in Mathematica 5.0 and more recent versions";

```
<< DiscreteMath`Combinatorica`
```

"Using the following command the correlation matrix can be imported from a txt format file: "rho.txt". With the command `Directory[]` you can see the current working directory. The rho.txt file should be there. The command `SetDirectory["path"]` sets the working directory.";

```
rho = Import["rho.txt", "Table"];
```

```
n = Dimensions[rho][[1]]
```

"The ordered link list S_{ord} (rholistSort) can be constructed with the following list of instructions. The list is sorted in descending order of correlation coefficients.";

```
rholist = {}
```

```
Do[rholist = Append[rholist, {rho[[i, j]], i, j}], {i, 1, n - 1}, {j, i + 1, n}]
```

```
rholistSort = Sort[rholist];
```

```
rholistSort = Reverse[rholistSort];
```

```
dd = Dimensions[rholistSort];
```

"The following set of instructions is the kernel of the construction algorithm of the PMFG. The output matrix A_{ij} is the adjacency matrix of the PMFG.";

```
Aij = Table[0, {i, 1, n}, {j, 1, n}];
```

```
control = 0;
```

```
For[t = 1, t ≤ dd[[1]],  
t++, If[control ≤ 3 (n - 2) - 1,  
{i = rholistSort[[t, 2]],  
j = rholistSort[[t, 3]],  
Aij[[i, j]] = 1,  
Aij[[j, i]] = 1,  
If[PlanarQ[FromAdjacencyMatrix[Aij]] == False,  
{Aij[[i, j]] = 0,  
Aij[[j, i]] = 0}, control = control + 1]  
}]]
```

"Aij can be exported in txt format with following instruction.";

```
Export["adjPMFG.txt", Aij, "Table"]
```