TUP input (instance) format

August 31, 2015

This document describes the input format for TUP (Traveling Umpire Problem) instances as originally proposed by M.A. Trick and H. Yildiz. The input files for the instances contain three elements: number of teams, distance matrix, and tournament schedule.

1   Number of teams

The number of teams is described as follows:

```
nTeams=N;
```

Where `N` denotes the number of teams.

2   Distance matrix

The distance matrix is described as:

```
 dist= [
[   0   D12  D13 D14 ... D1N]
[  D21   0   D23 D24 ... D2N]
[  D31  D32   0  D34 ... D3N]
[  D41  D42  D43  0  ... D4N]
[  ...  ...  ... ... ... ...]
[  DN1  DN2  DN3 DN4 ...  0 ]
     ];
```

Where Dij denotes the distance between team i's home location and team j's home location, with $i, j \in \{1, 2, 3, \ldots, N\}$.

3   Tournament schedule

The tournament schedule is described as:

```
opponents=[
[ O11  O12  O13  O14 ... O1N]
[ O21  O22  O23  O24 ... O2N]
[ O31  O32  O33  O34 ... O3N]
[ O41  O42  O43  O44 ... O4N]
[ ...  ...  ...  ... ... ...]
[ OR1  OR2  OR3  OR4 ... ORN]
         ];
```

Where Ori denotes the opponent of team i in round r. With $i \in \{1, 2, 3, \ldots, N\}, r \in \{1, 2, 3, \ldots, R\}$ and $R = 2N - 2$. A negative Ori value means that the game is played at the opponent's home location.