

Article:

B. Ristic, B.-N. Vo, D. Clark, B.-T. Vo, "A Metric for Performance Evaluation of Multi-Target Tracking Algorithms" IEEE Trans Signal Processing, to appear.

Instructions for using the MATLAB code:

1. tracks.mat contains two track arrays. Load this file using MATLAB command 'load tracks'.
 - a. trk1: contains the true tracks
 - b. trk2: estimated tracks (output from the tracker)

Note that trk1 and trk2 are 3-dimensional,

➤ size(trk1) is 4 120 5

➤ size(trk2) is 4 120 8

The first dimension is the state vector dimension (in this case: $x \ \dot{x} \ y \ \dot{y}$)

The 2nd dim: scan number ($k=1, \dots, 120$)

The 3rd dim: tracks (trk1 has a total of 5 tracks, trk2 contains 8 tracks).

Example:

```
> trk1(:,6,:)
```

```
ans(:,:,1) =
```

```
NaN  
NaN  
NaN  
NaN
```

```
ans(:,:,2) =
```

```
NaN  
NaN  
NaN  
NaN
```

```
ans(:,:,3) =
```

```
426.5074  
1.3346  
806.6084  
-2.3585
```

```
ans(:,:,4) =
```

```
331.4979
```

```
2.0654
349.0720
1.1610
```

```
ans(:,:,5) =
```

```
NaN
NaN
NaN
NaN
```

This means that at scan k=6, there are only 2 tracks in trk1 (tracks 3 and 4).

2. Run the metric:

```
>> [dist ] = perf_asses(trk1,trk2);
```

3. Three figures are generated:

- a. Fig2 – cardinality vs time
- b. Fig3 – OSPA-T vs time (red line)
- c. Fig10 – tracks (trk1 and trk2)

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