NYCLIMATEMARCH2014 MULTIPLEX SOCIAL NETWORK

Last update: 05 Oct 2015

Reference and Acknowledgments

This README file accompanies the dataset representing the multiplex social network of users in Twitter. If you use this dataset in your work either for analysis or for visualization, you should acknowledge/cite the following paper:

```
'Characterizing interactions in online social networks during exceptional
events'
E. Omodei, M. De Domenico, A. Arenas
Front. Phys. 2015 3, 59
```

that can be found at the following URL:

http://journal.frontiersin.org/article/10.3389/fphy.2015.00059/abstract

Visit

PLEXMATH: http://www.plexmath.eu/

ALEPHSYS: http://deim.urv.cat/~alephsys/

for further details.

Description of the dataset

We consider different types of social relationships amoung users, obtained from Twitter during an exceptional event. In this specific dataset we focused on People's Climate March in 2014

The multiplex network used in the paper makes use of 3 layers, corresponding to retweet, mentions and replies observed between

```
Start: 2014-09-19 00:46:19
End: 2014-09-22 06:56:25
```

There are 102439 nodes, labelled with integer ID between 1 and 102439 and 353495

connections. The multiplex is directed and weighted (obtained by summing up the number of a specific type of interaction over time), stored as edges list in the file

```
NYClimateMarch2014_multiplex.edges
```

with format

```
layerID nodeID nodeID weight
```

The IDs of all layers are stored in

```
NYClimateMarch2014_layers.txt
```

The IDs of nodes (note that screen names are not provided for privacy reasons) can be found in the file

```
NYClimateMarch2014_nodes.txt
```

In addition, online interactions of users are provided with the temporal information in the file

```
NYClimateMarch2014_activity.txt
```

with format

```
nodeID nodeID timestamp type
```

where timestamp is in seconds and type is the layer name. There are 413350 temporal interactions, in total.

Note 1: the direction of links depends on the application, in general. For instance, if one is interested in building a network of how information flows, then the direction of RT should be reversed when used in the analysis. Nevertheless, the choice is left to the researcher and his/her own interpretation of the data, whereas we just provide the observed actions, i.e., who retweets/mentions/replies/follows whom.

Note 2: users mentioned in retweeted tweets are considered as mentions. For instance, if @A retweets the tweet 'hello @C @D' sent by @B, then the following links are created: @A @B timeX RT, @A @C timeX MT, @A @D timeX MT, because @C and @D can be notified that they have been mentioned in a retweet. Similarly in the case of a reply. If for some reason the researcher does not agree with this choice, he/she can easily identify this type of links

and remove the mentions, for instance.

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Contacts

If you find any error in the dataset or you have questions, please contact

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