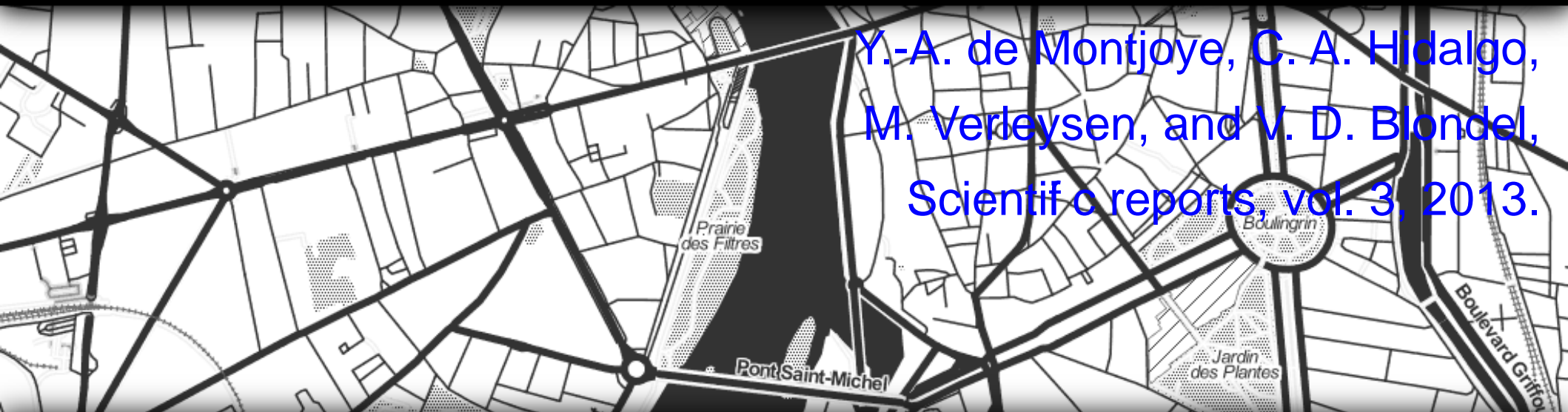# Unique in the Crowd

The privacy bounds of human mobility

Y.-A. de Montjoye, C. A. Hidalgo, M. Verleysen, and V. D. Blondel,
Scientif c reports, vol. 3, 2013.

Summary

- Modern technology is challenging individual privacy.

- Examined data containing human location traces

- Defining uniqueness of human mobility : the number of points p needed to uniquely identify the mobility trace of an individual

Summary

- Most people do not have the same pattern of movement

- Four random points could identify 95 % of the traces, making human mobility highly unique

- Outside data could be linked to an individual

Summary

- Uniqueness remains high in lower temporal resolution

- Uniqueness remains high in lower spatial resolution

- Data in anonymity is not really anonymous

Appreciation

- Laid strong foundation for future work

- Quantitative approach used. Stated a clear defination of uniqueness and specified how factors that matters contribute to the results.

- Defination and finding can be used in future work and real world projects

Appreciateion

- Not stopping in the current dataset ; discussed what if we have a dataset with lower resolution

- Thus, answering the question that if it is possilbe to make it less unique by collecting data in a less accurate way – probably not

Drawback – about the dataset

- They did not provide the details of the dataset

- Failed to specify how to tell different users : are they recording each user's number ?

- This is rather important, for example, in an internet dataset we may distinguish users by ip address ; however, different users my share the same ip address

Drawback – about the dataset

- Only one dataset used. No compare, no contrast

- It would be better to show the results from other sorts of dataset, such as mobile internet

- What about other western countries ? And less developed countires ?

Question

- Now that we know human mobility is rather unique, is there a new way to collect data that significantly decrease the uniquess of individual moving trace ? If there is, how shall we make us less likely to be tracked ?

The End

Thank you !