

PROBLEM

Extremist groups such as ISIS have had success spreading their agenda and recruiting members from all over the world. Their success has often been attributed to their social media strategy. However, this claim has not been comprehensively evaluated.

We ask the following questions:

1. How influential is ISIS?
2. How fragile is ISIS against noise?
3. Can they be detected?

DATASET

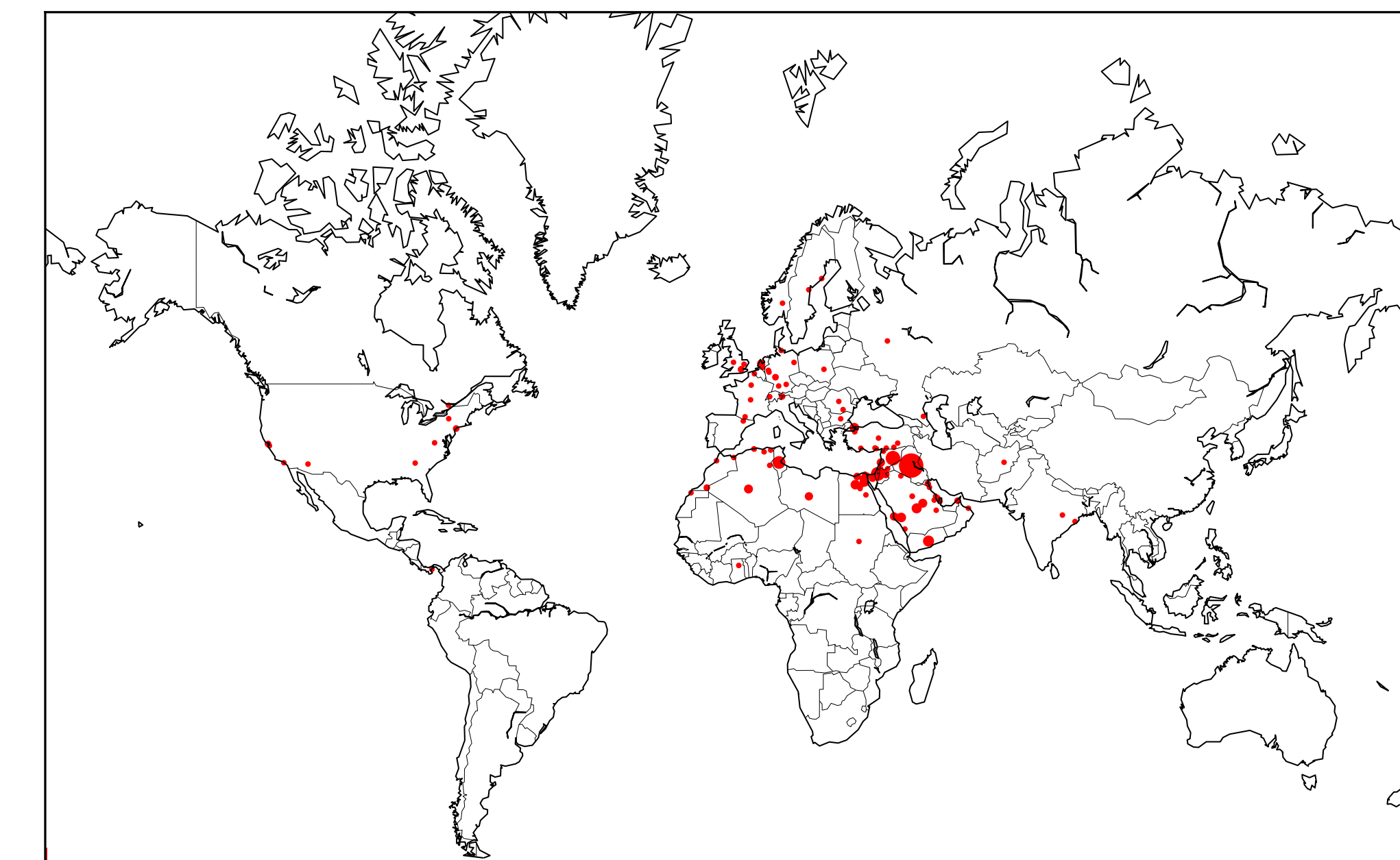
We have all Arabic tweets generated in 2015 through private access to Twitter Firehose.

Dataset	Size
Tweets	9,285,246,636
Accounts	26,711,275

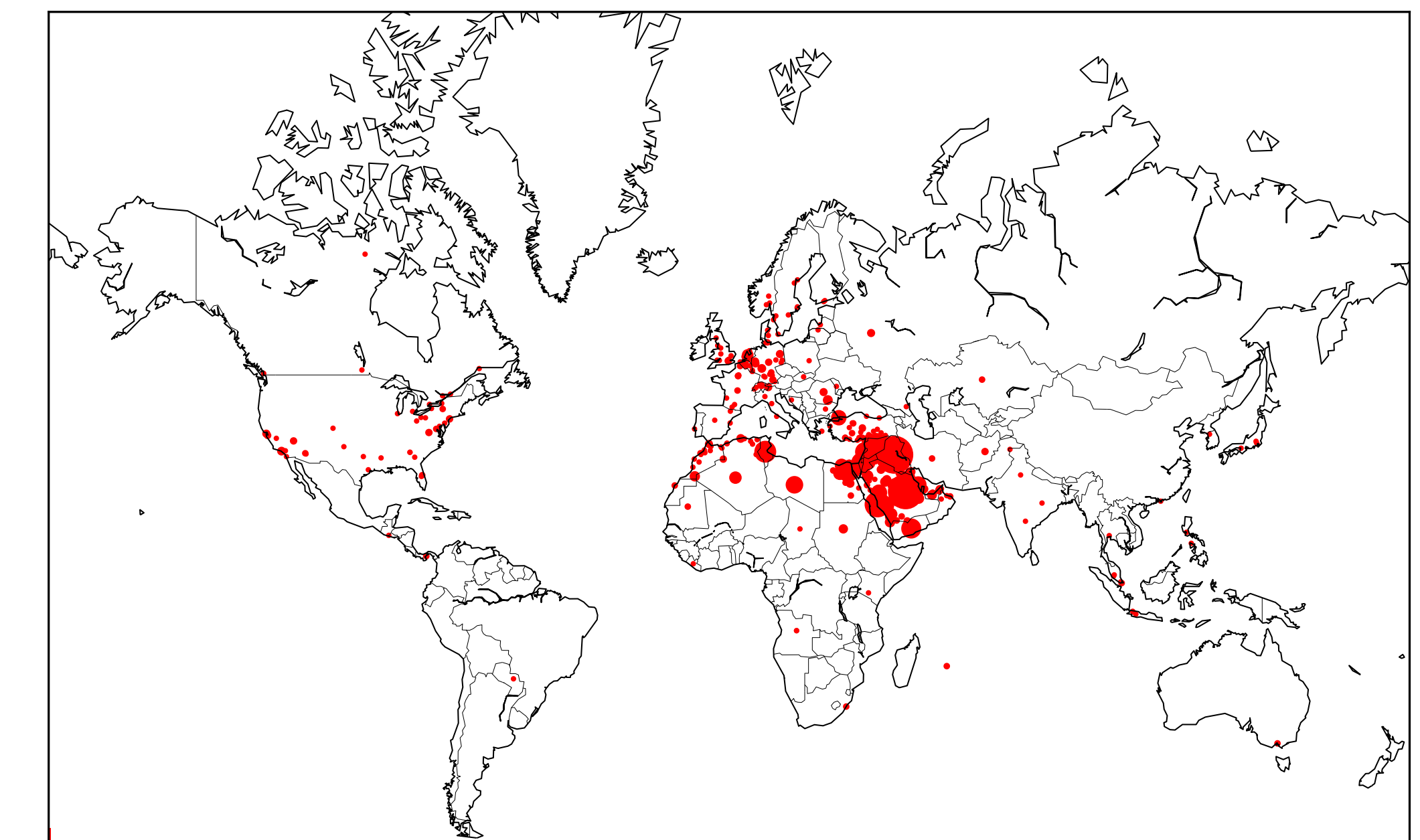
Crowdsourcing efforts identified 24k ISIS accounts which we expand using method in [2]:

Dataset	Size
ISIS Tweets	341,365,270
ISIS Accounts	173,340

ISIS LOCATIONS

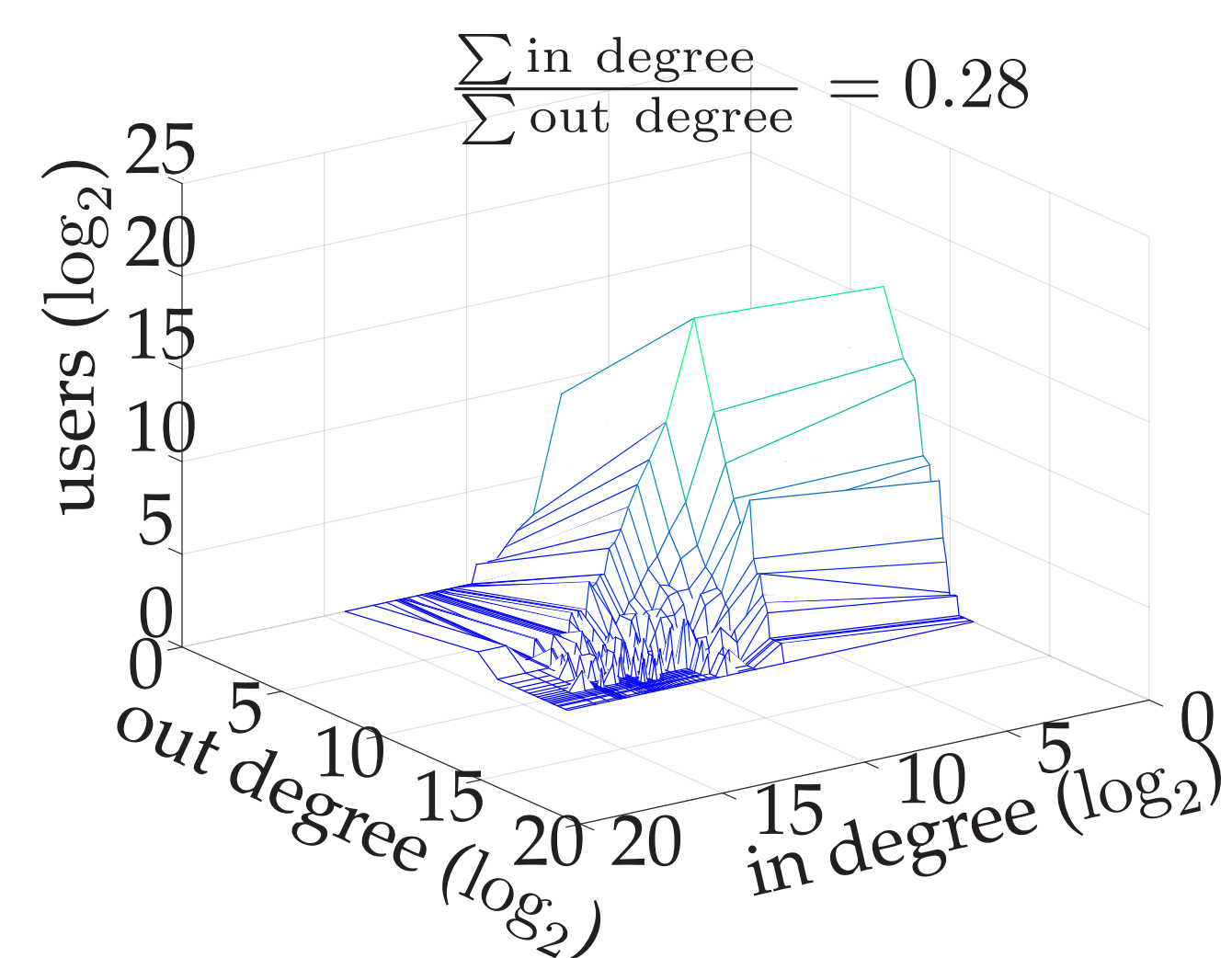


Seed ISIS accounts

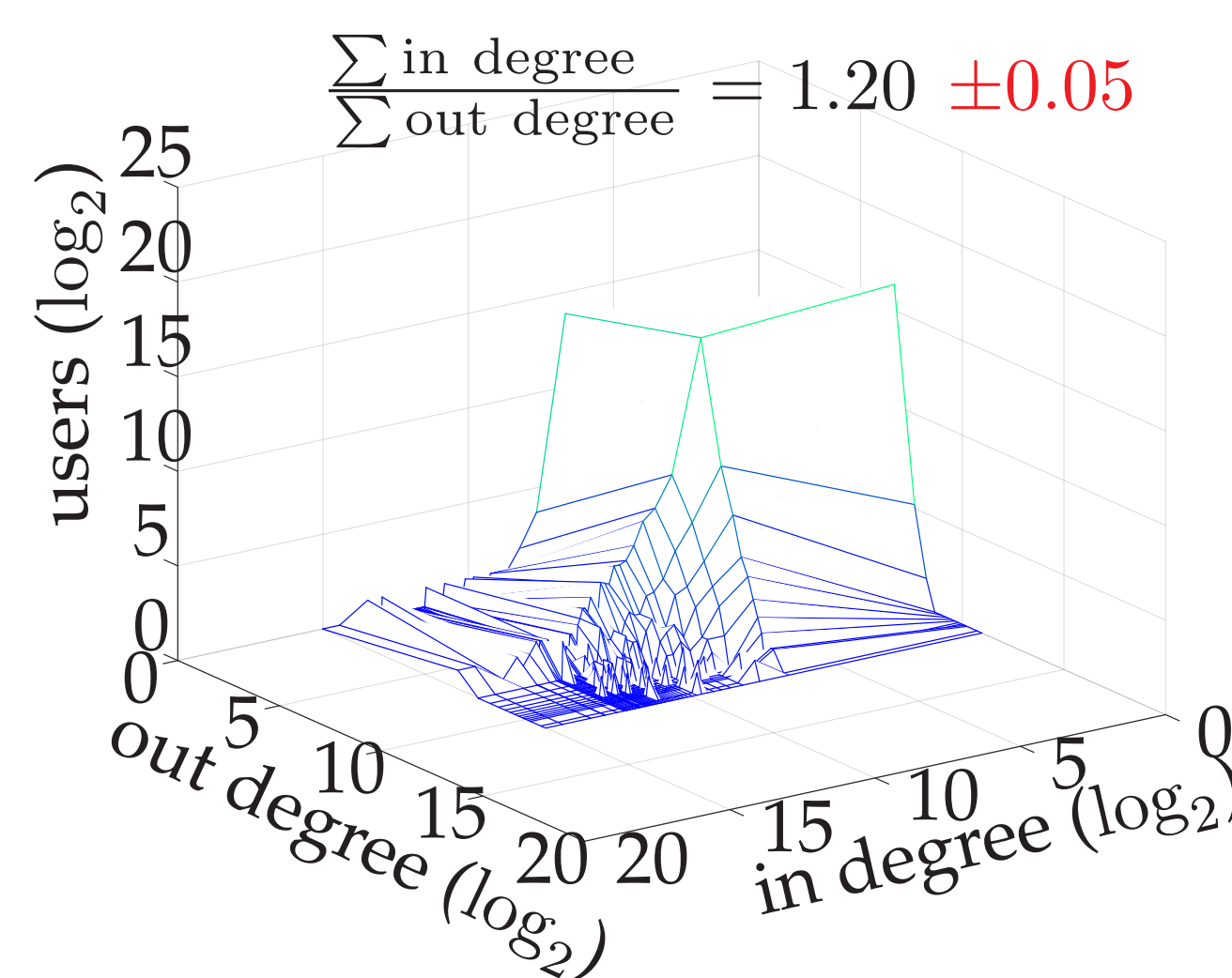


Expanded ISIS accounts

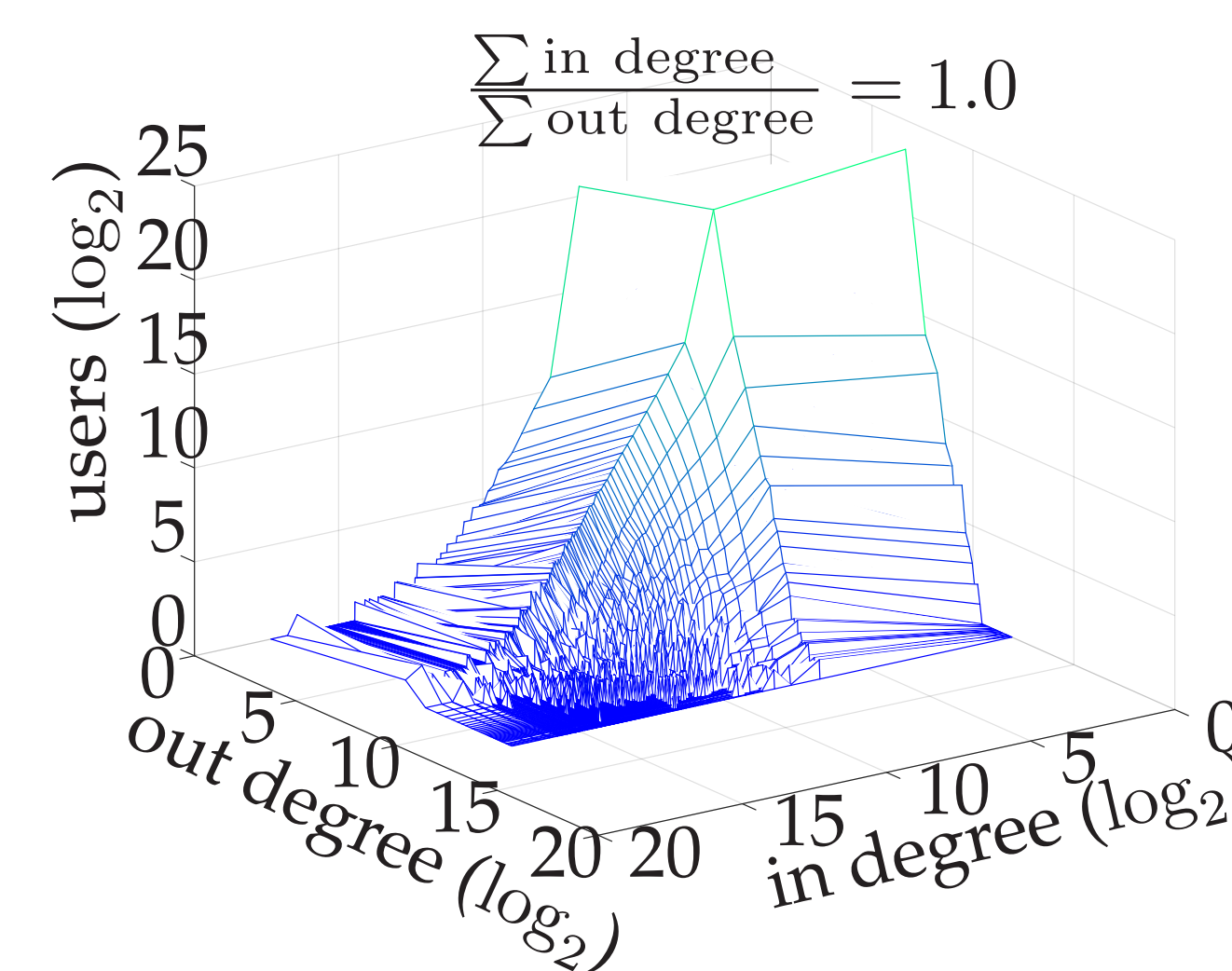
ISIS INTERACTION STYLE



ISIS takes a more aggressive outward-strategy.

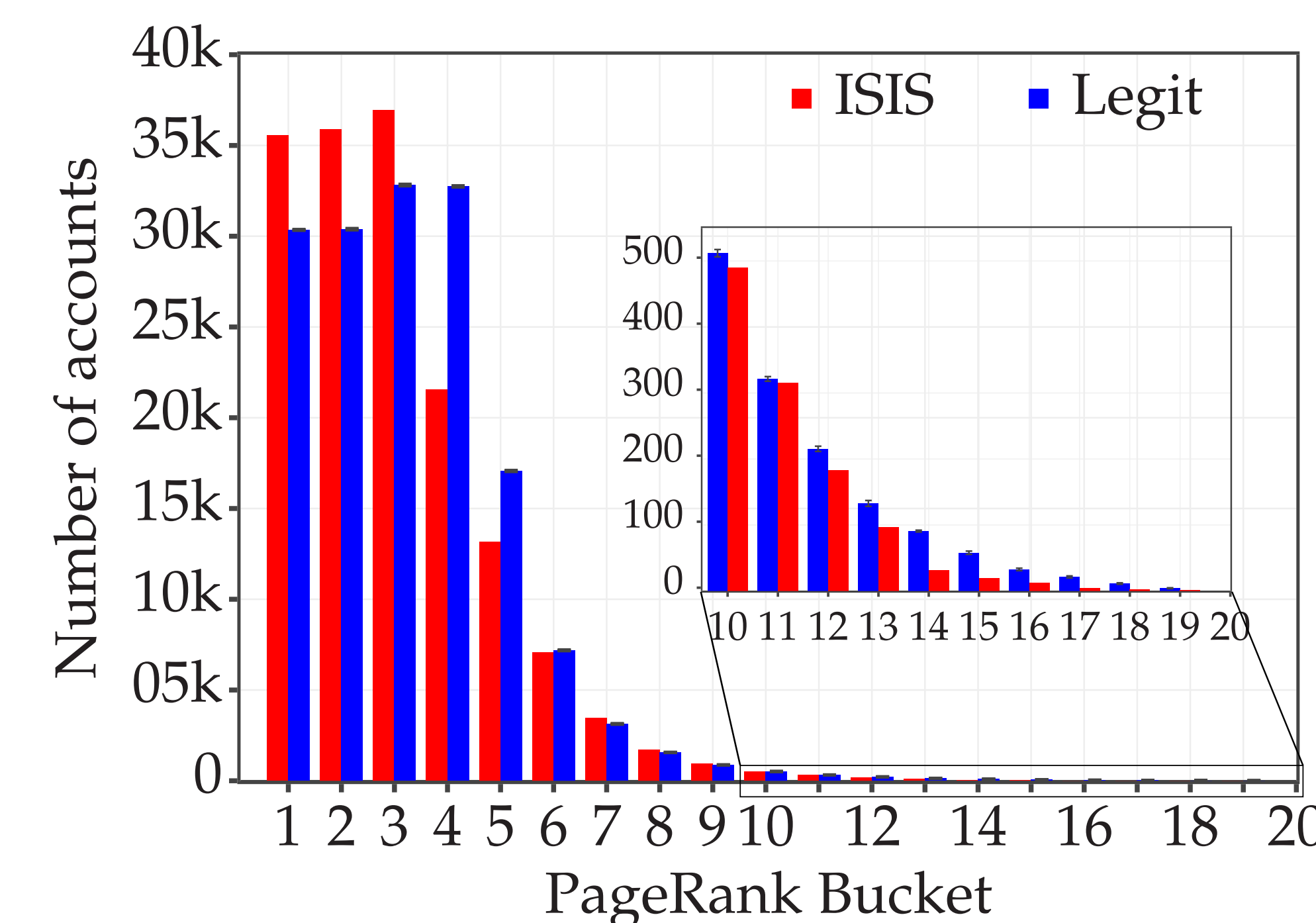


A random sample of legit accounts for comparison.

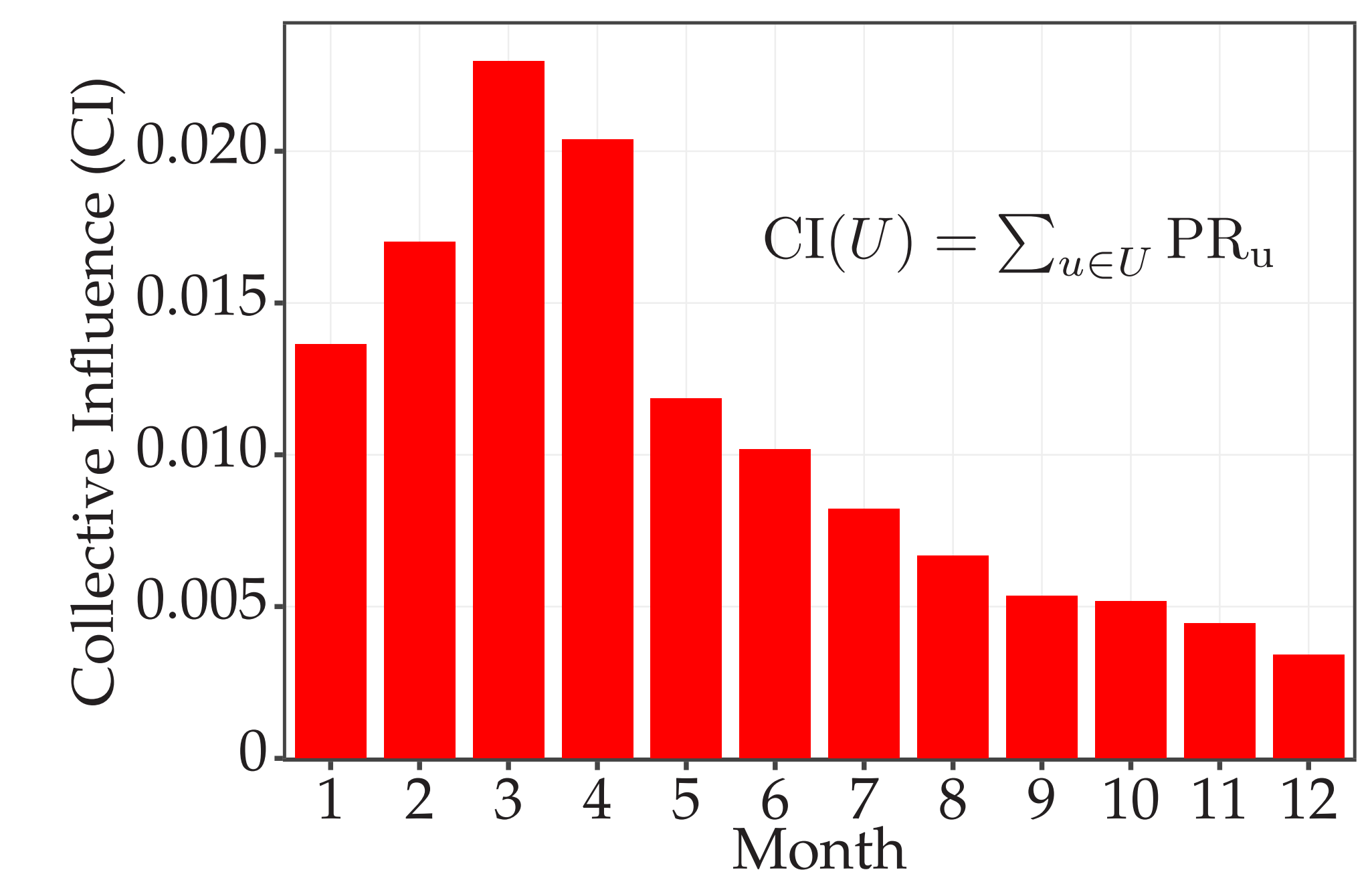


All Arabic tweets in 2015.

ISIS COLLECTIVE INFLUENCE

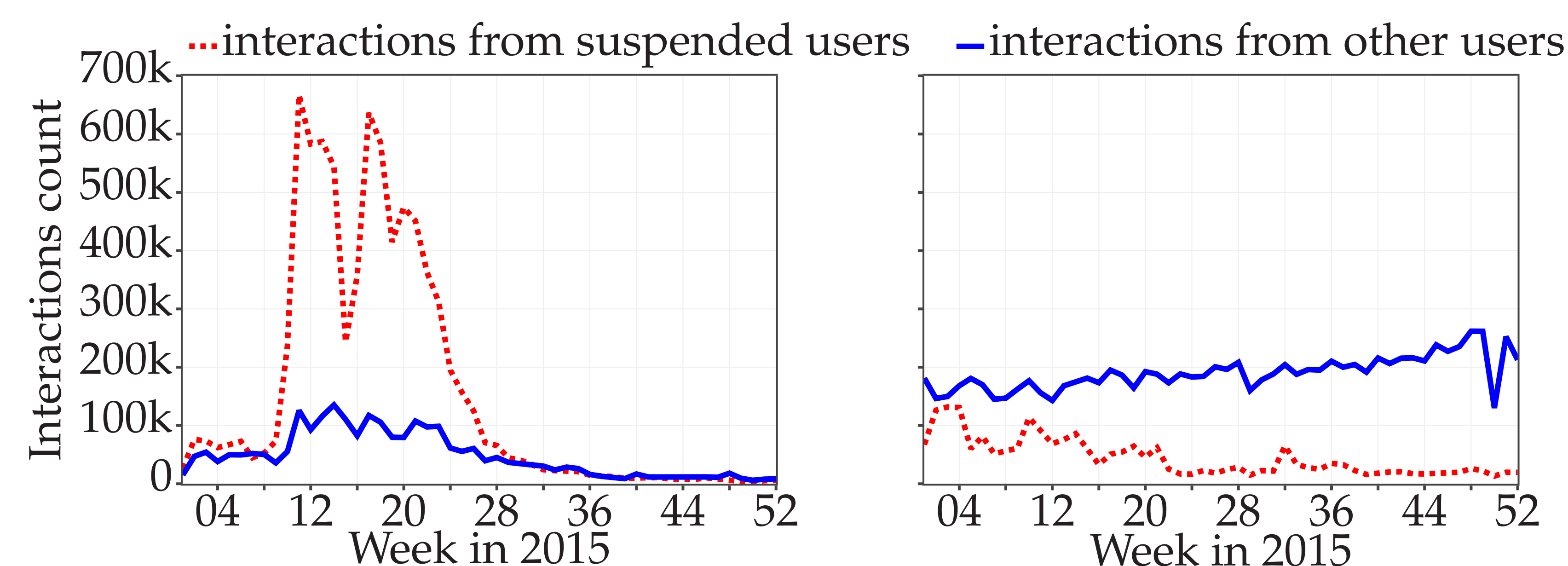


Running PageRank on the interactions graph and distributing results into 20 buckets in increasing order of importance. ISIS is less influential than the average (left-skewed).



Collective Influence (CI) of ISIS over months. ISIS gained a little momentum in early 2015 but then its influence kept decreasing due to Twitter cracking down on them.

FRAGILITY OF ISIS COMMUNITY AGAINST SUSPENDED USERS



ISIS. Majority of users (76%) interacting with ISIS eventually get suspended.

Legit sample. Twitter spam effect on legit users is relatively much smaller.

CAN WE DETECT ISIS?

Using Linguistic and Behavioral features, a Random Forest classifier achieved the following [1]:

Metric	Value
AUC/ROC	0.92
Accuracy	0.84

Most accounts were detectable from first month.

REFERENCES

- [1] Alfifi, M., and Caverlee, J. 2017. Badly evolved? exploring long-surviving suspicious users on twitter. In *International Conference on Social Informatics*, 218–233. Springer.
- [2] Magdy, W.; Darwish, K.; and Weber, I. 2015. #failedrevolutions: Using twitter to study the antecedents of isis support. *arXiv preprint arXiv:1503.02401*.
- [3] Page, L.; Brin, S.; Motwani, R.; and Winograd, T. 1999. The pagerank citation ranking: Bringing order to the web. Technical report, Stanford InfoLab.