



# A climate of sharing: Who are the users engaging with climate research on Twitter?

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# Outline



- Users and climate research on Twitter
- Research questions
- Datasets and methods
- Results – Users sharing climate research on Twitter
- Results – Application of the method
- Conclusions

# Who tweets about science ?



- Astrophysicists on Twitter (Holmberg & al., 2014)
- Coding users based on Twitter bios (Tsou & al., 2015)
- Identifying Twitter bots (Haustein & al., 2016)
- SNA of follower networks of users tweeting articles (Alperin & al., 2018)
- What, Who, How, When and Where of Twitter metrics (Haustein, 2018)

# Climate research on Twitter



- IPCC 5<sup>th</sup> Assessment Report
  - Communities emergence and discourse (Pearce & al., 2014)
  - Communities and campaign evolution (Holmberg & Hellsten, 2016a)
  - Topics and meanings by communities (Holmberg & Hellsten, 2016b)
  - Identifying actors discussing the AR5 (Newman, 2016)
- COP21
  - Visual Data Analysis (Hopke & Hestres, 2018)

# Research questions



- Who are the users sharing climate research on Twitter?
- How to identify users with keywords retrieval in Twitter bios?
- Focus on lay-users



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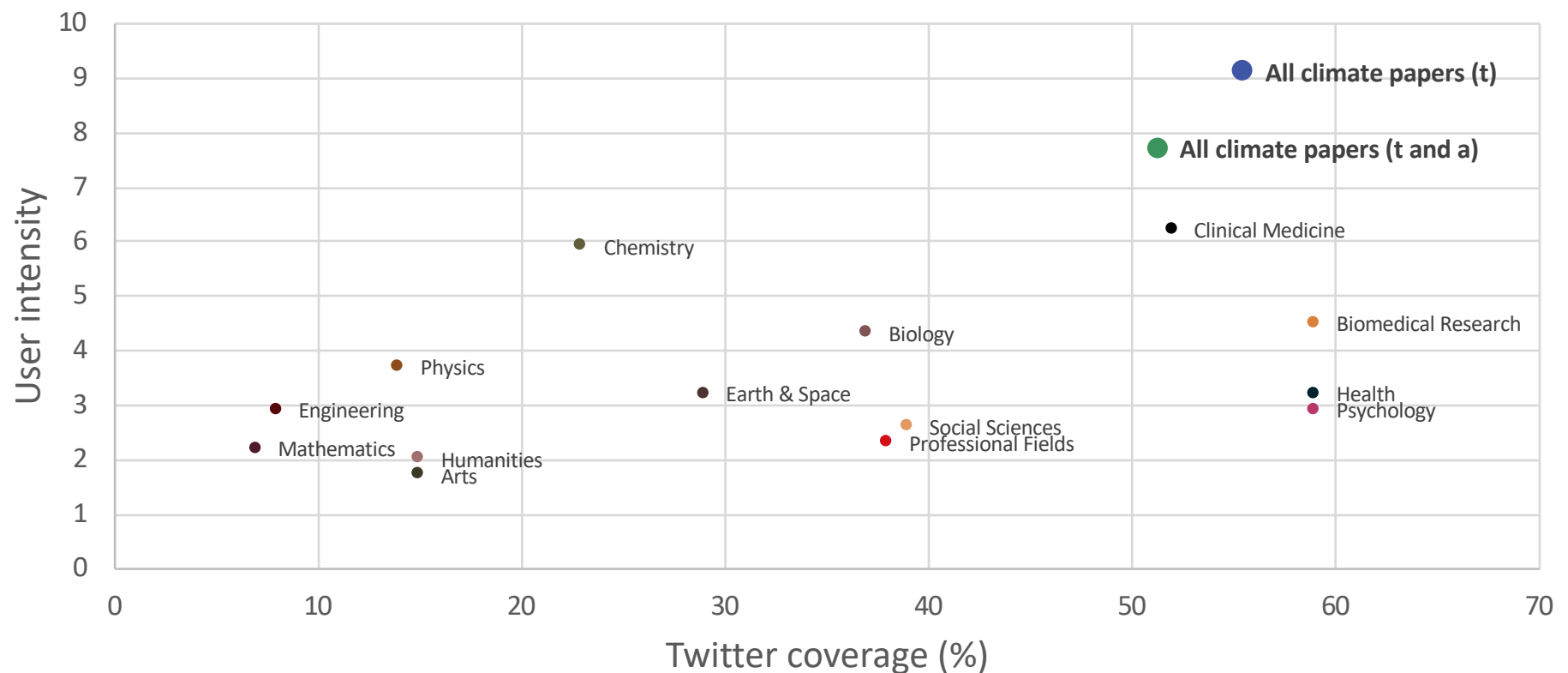
📍 Montréal, Québec

📅 Inscrit en août 2012

# Datasets and Methods



- Two datasets of papers/users/tweets for 2015-2016
  - Keywords in titles and abstracts
  - Keywords in titles only



# Datasets and Methods



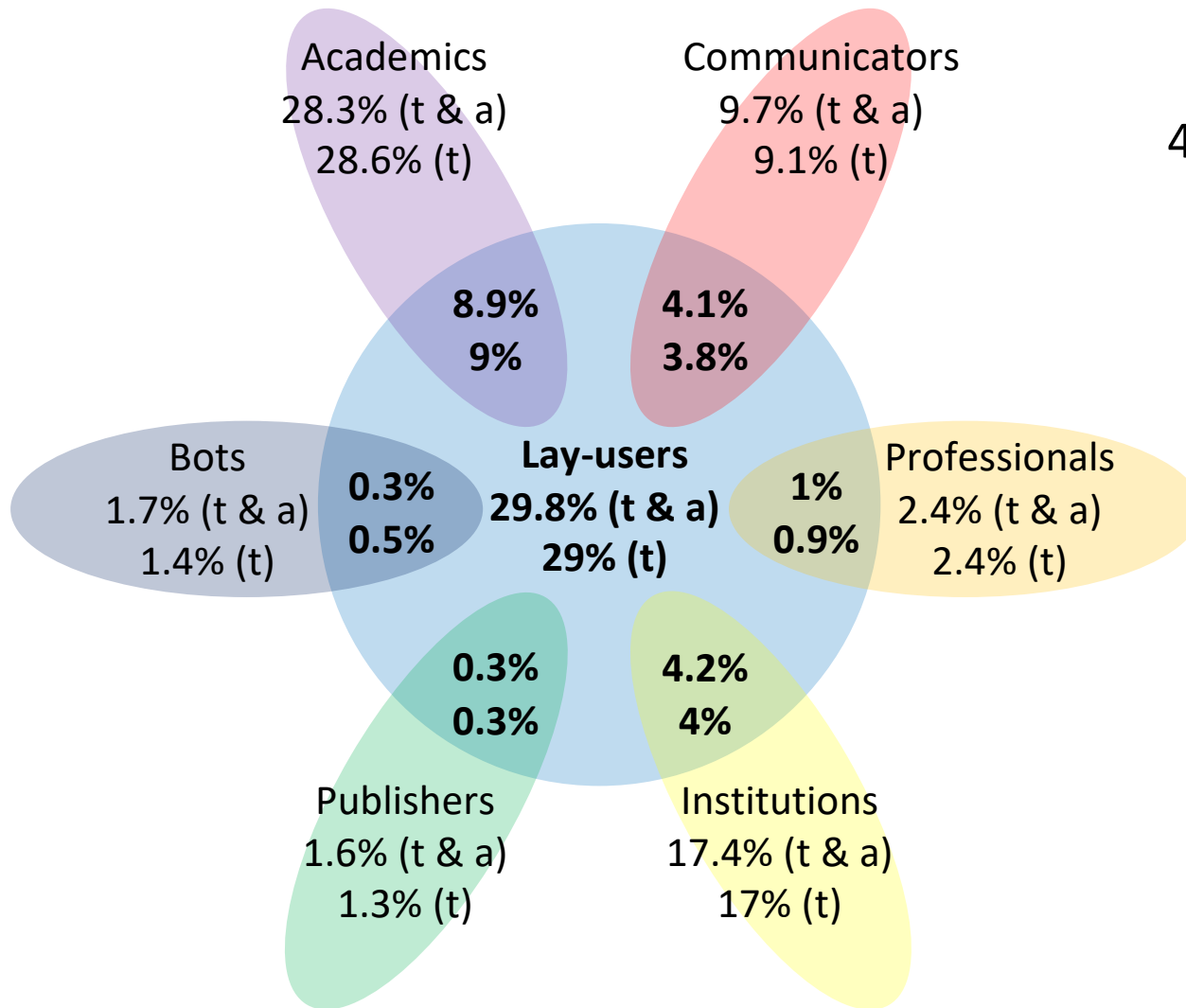
- [Codebook development](#)
- Keywords matching in SQL

```
# Identify users as researchers/academics/students
```

```
WHERE ((t.Author_Description_Cleaned LIKE '%professor%' AND NOT  
t.Author_Description_Cleaned LIKE '%professors%')  
OR (t.Author_Description_Cleaned LIKE '%prof%' AND NOT  
(t.Author_Description_Cleaned LIKE '%professional%' OR  
t.Author_Description_Cleaned LIKE '%profit%')  
OR (t.Author_Description_Cleaned LIKE '%postdoc%')  
OR (t.Author_Description_Cleaned LIKE '%PhD%')  
OR (t.Author_Description_Cleaned LIKE '%Ph.D%')  
OR (t.Author_Description_Cleaned LIKE '%doctoral%')  
OR (t.Author_Description_Cleaned LIKE '%grad student%' AND NOT  
t.Author_Description_Cleaned LIKE '%grad students%'))
```

```
# And so on
```

# Results - Users



## Identified users

49,429 users – 60.8% (t & a)  
19,944 users – 62.2% (t)

## Unidentified users

39.2% (t & a)  
37.8 % (t)

?



# Results - Methods



- Codebook building → iterative process
  - Context of keywords

Stroud born. Lived in & Love West Wales, especially the Cardigan Bay Bottlenose Dolphins, but all Wildlife & animal crazy.

Professor of Chemistry, University of Bristol. Computational chemistry, enzyme catalysis, biomolecular simulation, HPC, antibiotic resistance. Views my own, not RTs

- Categories overlap

Fire scientist, mom of three, wife of one, tenured prof, foodie, your best running buddy

Social scientist in media & society, mami, traveler, environmental communicator, documentary producer

- Lay-users → category or anti-category?

# Results - Methods



Skogbiolog fra Vestfold. Master i sjeldne lav på gamle asketrær. Jobber med [#skogvern](#) i [@WWFNorge](#) og for en årlig norsk [#skogvernmilliard](#) tmyhre@wwf.no 41687431

Enimmäkseen harmiton maailman ihmettelijä, jolle ihmisen ja olevaisuuden pohtiminen ovat suuri intohimo. [@Puistofilosofia](#)-tapahtuman vetäjä.

الصفحة العلمية لتبادل المعلومات العلمية في الطب والصيدلة ، واستقبال الاسئلة ، والمقترحات العلمية والابحاث الصيدلانية، والمقالات العلمية

ブルース・リーの年齢をとうに超えてしまった。秋山小兵衛のような年寄りになりたいな。柔道整復師、卯年のおとこ。RTが主です。

Me construyo con el paso de los días; soy dantera, encontré una familia por [#Dante2018](#) En [#Ovidio2018](#) y [#Cervantes2018](#) por ahora. Nada de lo ajeno me es humano.

C'est pas du vent! sur [@RFI](#): une émission d'environnement internationale pour secouer les consciences. Jeudi et vendredi à 16h10 Des reportages et des débats.

# Conclusion



- Limitations
  - Codebook accuracy – iterative process
  - Overlapping categories
  - User dependance
  - Language issues
- Users sharing climate research on Twitter
  - Significant engagement by lay-users
  - Other potential categories
  - Lay-users = anti-category?

# Conclusion



- Future research
  - Reviewing results for future iterations
  - Matching categories
  - Codebook development
  - Lay-users -> anti-dictionnary
  - SNA for research sharing networks (Alperin et al., 2018)

# Thank you!



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