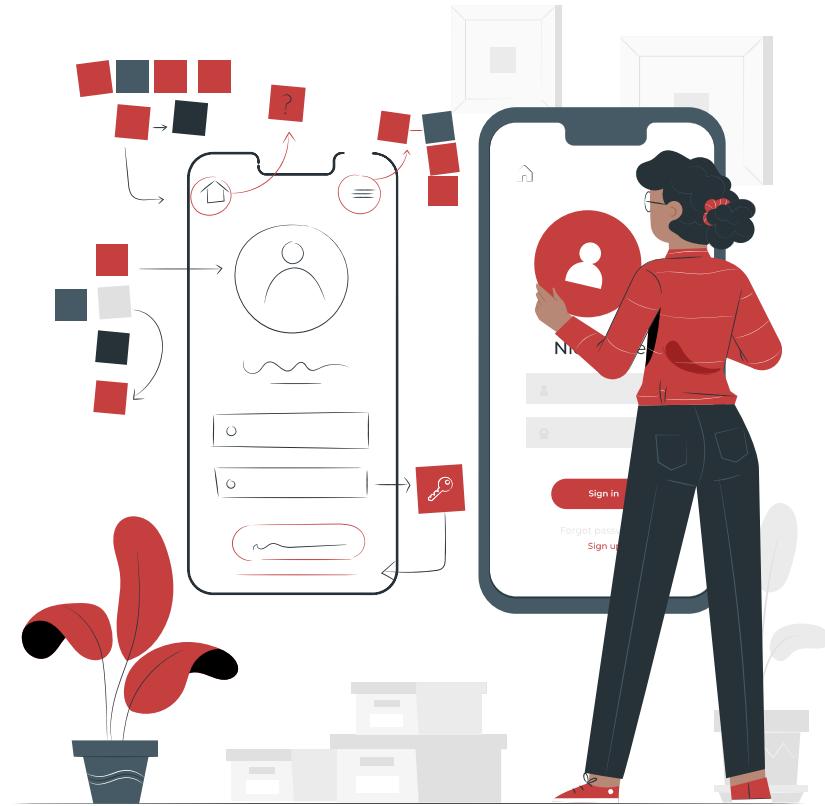


SOCIAL MEDIA ANALYSIS NUCLEAR WASTE WATER In Weibo & Twitter

GROUP: The Grey Wolf
GUO Qian
CHIU SingYuk
LIANG Xinyu
WANG Peijie
ZHANG Xiaoxiao



AGENDA

01

Background

Background story
Our idea

02

Dataset & Processing

Weibo & Twitter
Pre-processing

03

Visualization & Analysis

Sentiment analysis
Modularity

04

Conclusion

Conclusion
Discussion



01

Background Story

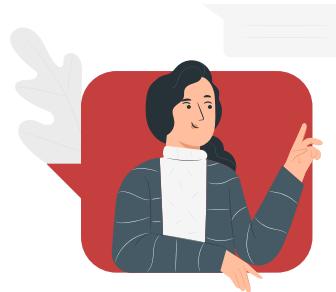
Background story and our group idea



Background Story

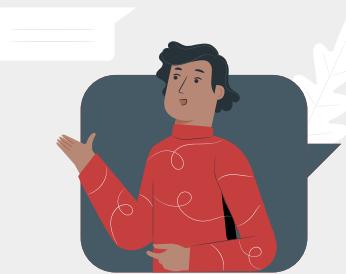
Recently, Japanese officials announced a piece of news that it plans to discharge 1.23 million tons of nuclear waste water into the Pacific Ocean. As soon as the news came out, it triggered a wave of public opinion worldwide. Countries and all walks of life are highly concerned, and generally express doubts and opposition. We want to explore the positions of various countries from the public opinions of the two major social platforms, Weibo and Twitter, so as to further analyze the political and interest conflicts and favoritism hidden in the data.

Idea



Weibo

Chinese platform
Consists of Chinese people



Twitter

International platform
People all over the world
Japan, US,

top tweets



Secretary Antony Blinken ✅ @SecBlinken · Apr 13

⚑ United States government official

We thank Japan for its transparent efforts in its decision to dispose of treated water from the Fukushima Daiichi site. We look forward to the Government of Japan's continued coordination with the @iaeaorg.

3.4K

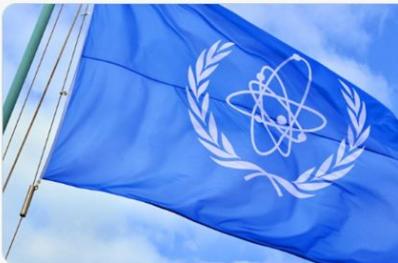
2.5K

4.7K



IAEA - International Atomic Energy Agency ✅ @iaeaorg · Apr 1
IAEA ready to support Japan on #Fukushima water disposal, Direct General @RafaelMGrossi says.

bit.ly/3a5VB9Q



163

412

498



Retweeted
Greta Thunberg @Greenpeace · Apr 13

Today, the Japanese government decided to dump over 1.23 million tons of Fukushima radioactive waste water stored into the Pacific Ocean. This decision completely disregards the human rights and interests of the people in Fukushima, wider Japan, and the Asia-Pacific region. [1/3]



432

2.9K

5K



菅 義偉 ✅ @sugawitter · Apr 13

⚑ 日本の政府関係者

ALPS処理水の処分は、福島第一原発の廃炉を進め、福島の復興を成し遂げるために避けて通れない課題です。

このため、6年以上にわたり、有識者の検討、国際機関からの評価、関係者への説明を行い、海洋放出が現実的と判断し、基本方針を取りまとめました。

準備作業を進め、2年後をめどに開始します。

874



Retweeted
IAEA - International Atomic Energy Agency @IAEAorg · Apr 13

I welcome Japan's announcement on how it will dispose of the treated water stored at #Fukushima nuclear power plant. @IAEAorg will work w/ before, during & after the discharge of the water to help ensure this is carried out without an adverse impact on health & environment. 1/2



Fukushima Wastewater Will Be
The government says the plan
to prevent the ruined nuclear
nytimes.com

631

1.4K





R1SE-任豪

4-14 17:59 来自绿洲 APP

对于日本福岛核电站 如果我们用更大的罩子使
封闭该地区为核废水处理厂。
如果我们祖国愿意去帮他一把 全世界人就能明
是中国力量 和 中国制造 的能力。
战争我们永远不能忘 可是这颗蔚蓝星球是我们的
家

(想法很简单 要杠你就赢) ☺绿洲



绿洲

微博出品的美好生活社交平台

转发

评论

任豪 外网

任豪道歉

任豪回应

R1SE-任豪

粉丝: 960万

任豪这是在干什么

Trending Weibo



人民日报

4-16 来自微博视频号 已编辑

【#赵立坚 7问日本核废水排海#: #赵立坚问若无
污染日本心虚什么#】赵立坚：世界各国难以理解的是，日方在没有穷尽安全处置手段的情况下，
为何执意选择损害全球海洋环境的危险方式？日方强调排放的是经处理的“净化水”，又何必建造储存
罐严密封装？日方称排放参照国际惯例和国际标准，但全世界还没有 ... [全文](#)



1275

717

1.4万



五岳散人

4-11 12:54 来自 iPhone 12 mini

+关注

回复 @赵大叔_:操心您家的空气吧，我这儿就不劳
您费心了//@赵大叔_:很快就要被核废水包围了

@五岳散人:朋友终于把这块地拿下了，风景太可以
了。

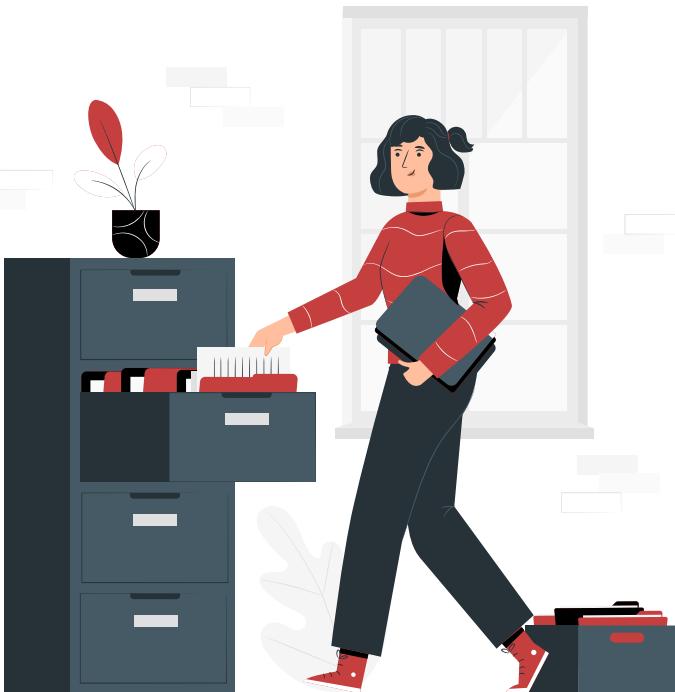
正在琢磨是不是分一小块，盖个小房子。



69

148

546



02 Dataset & Preprocessing

Scrapy from the Weibo
and Twitter



Source

Timeline: April 12 to April 17, 2021

Platform: Weibo & Twitter

For Weibo:

Scrapy from the m.weibo.com
Search the topic #核废水

For Twitter:

API

Hashtags: #Fukushima (福岛)
#NuclearWasteWater

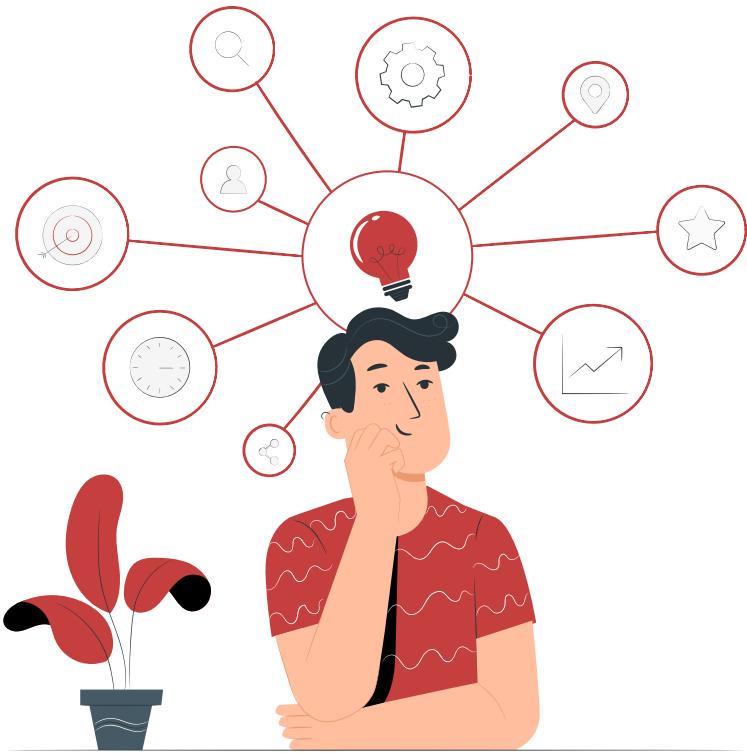
Dataset

userName	mentionName	userName	mentionName
XGuoforWaterloo	@JohnOCAP	hikaru姫	@Mr_凡先生
XGuoforWaterloo	@rafaelmgrossi	雨漫倾	@世面
XGuoforWaterloo	@iaeaorg	Aecho9	@王孟源dudu
Aroguden	@Reuters	Aecho9	@王孟源dudu
Aroguden	@AFP	NBAshley	@三维地图看世界
Aroguden	@Reuters	梅花竹影入梦乡	@校长梁山
Aroguden	@Reuters	宋雅庭	@涨乐财富通
Aroguden	@Reuters	澜析	@日本国驻华大使馆
Aroguden	@Reuters	Ianhf519	@iDaily每日视野
Aroguden	@Reuters	四川省崇州监狱	@法治四川
Aroguden	@Reuters	四川省崇州监狱	@四川监狱

	user_id	created_at	screen_name	text		location					
0	9.160000e+17	18/4/2021 11:51	XGuoforWaterloo	@JohnOCAP Don't forget the #Fukushima #Nuclear...		Kitchener, Ontario					
1	9.160000e+17	17/4/2021 11:49	XGuoforWaterloo	@rafaelmgrossi @iaeaorg The attitude of the US...		Kitchener, Ontario					
2	1.463413e+09	18/4/2021 11:44	Aroguden	#SouthKorea raised concerns over #Japan's deci...		Barquisimeto-Venezuela					
3	1.463413e+09	13/4/2021 11:32	Aroguden	#Japan will release more than a million tonnes...		Barquisimeto-Venezuela					
4	1.463413e+09	14/4/2021 9:38	Aroguden	#SouthKorea aims to fight #Japan's #Fukushima ...		Barquisimeto-Venezuela					
博主	id	时间	来源	收藏	转发	评论	点赞	转义	文本	标签	text
0	2345落英缤纷	6.628711e+09	04月 12日 22:59	OPPO智能手机	NaN	NaN	NaN	1.0	NaN	#日本核废水可致癌致畸致突变#	联合国呢？这么大的事都不发声的吗？我天虽然我不是医生，但是切尔诺贝利纪录片看得我毛骨悚然，...
1	脸长也叫特长bai生	2.962594e+09	04月 12日 22:59	OPPO R9s	NaN	NaN	NaN	NaN	NaN	#日本核废水可致癌致畸致突变#	日本核废水一旦排入太平洋中危害有多大,以后海鲜还有人敢吃吗?"哥斯拉"会因此出现吗? mo...
2	小桃红柳绿	2.149115e+09	04月 12日 22:59	华为P8	NaN	NaN	NaN	NaN	NaN	#日本核废水可致癌致畸致突变#	【专家】4月9日，日本政府基本决定将福岛核污水排入大海。12日，日本首相菅义伟表示，解决东...
3	苹果柠檬刮油汤	2.635392e+09	04月 12日 22:59	Android客户端	NaN	NaN	NaN	NaN	NaN	#日本核废水可致癌致畸致突变#	今日日本首相菅义伟再次表示，福岛核污水排入大海已经不能推迟了德国的海洋科学研究机构的计算显示...

We use Regular expression to split our twitter and Weibo data into two columns: userName and Mention Name in order to use Gephi to make a network to analyze.

After cleaning our row dataset, We use text data to do a word cloud analysis, sentiment analysis and use LDA method to do topic modeling.



03

Visualization Analysis

Wordcloud, sentiment,
social networking...

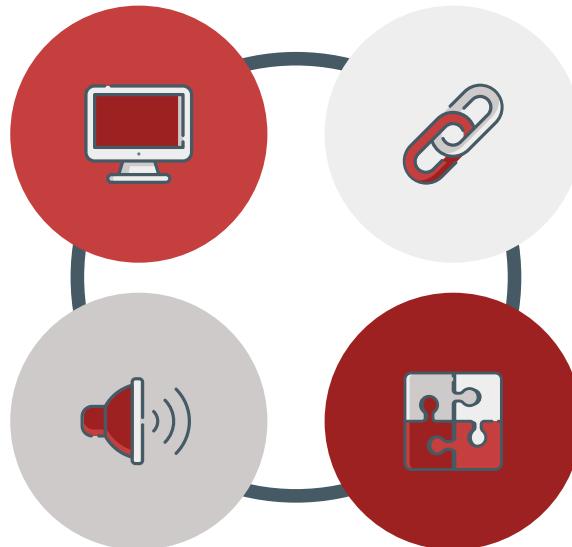
Visualization

Word cloud

Network Analysis

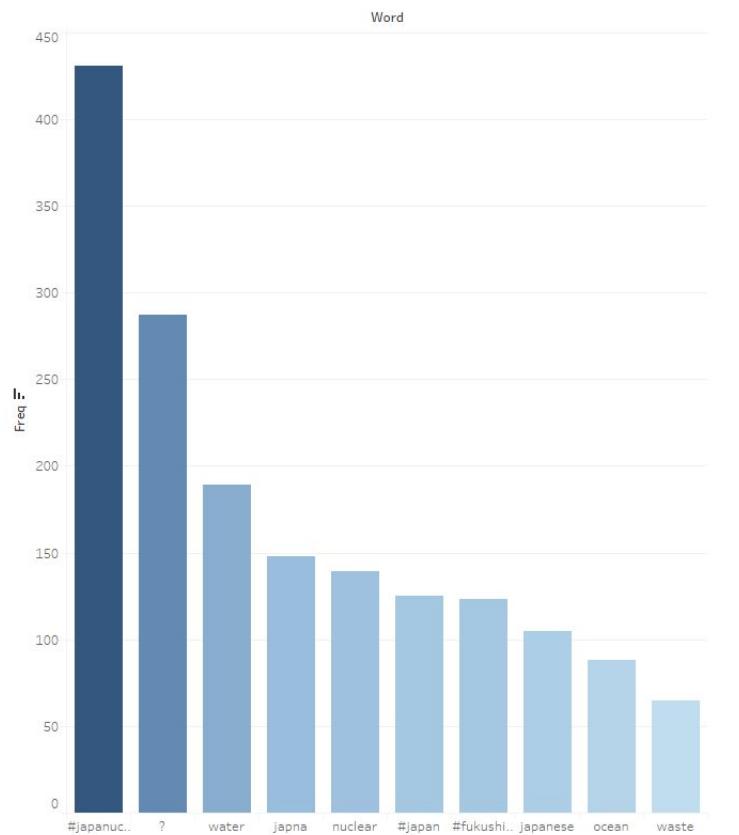
Sentiment analysis

Regional heat map



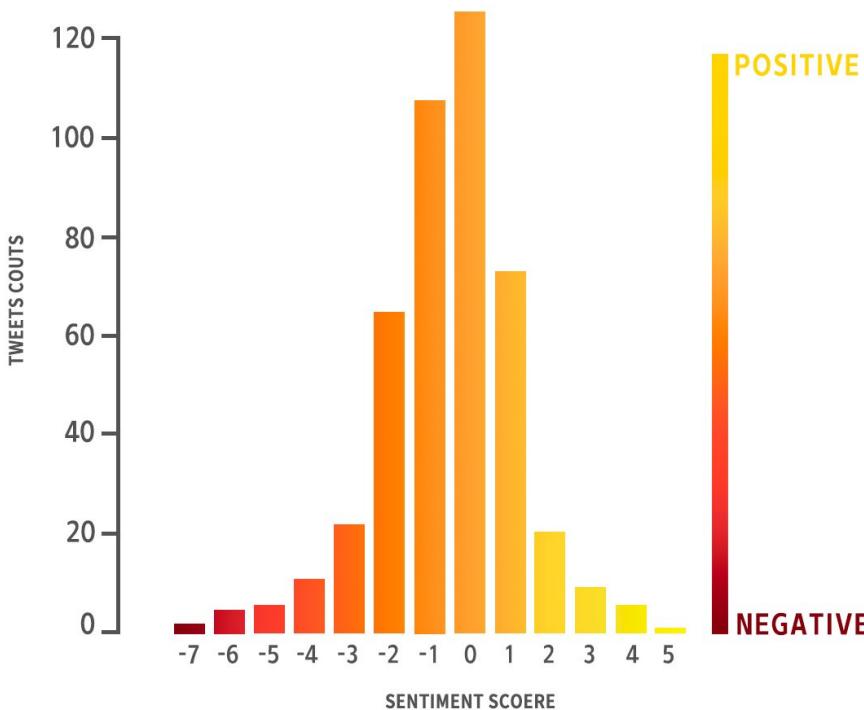
Japan Word cloud & Frequency

#pressfreedom godzilla safety
#nuclear country
#radioactivewastewater
@gretathunberg japan's#opleakagejp
#fukushima water #fucktepc
human govt evenpm
#adiactive discharge dumping usedump
#fuck_pacific decided drink
going like food release dare can
#news think safe fukushima whole happen
#joebiden keep #311isnotover
international #op_japan issue
#fukushima water sea now
please wastewater decision one stop later
humans government right visits just nothing years
treated radioactive people earth future present
#pleasert #unitedstates power still
contaminated #pacificocean plant want
#fukushima water sea now
please wastewater decision one stop later
humans government right visits just nothing years
treated radioactive people earth future present
#pleasert #unitedstates power still
contaminated #pacificocean plant want



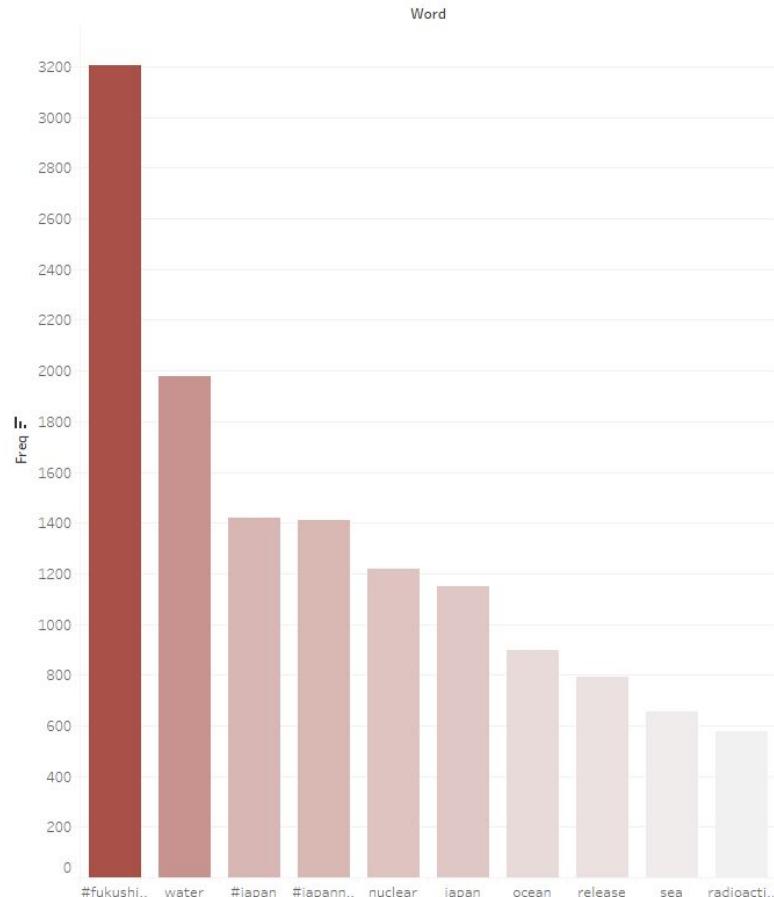
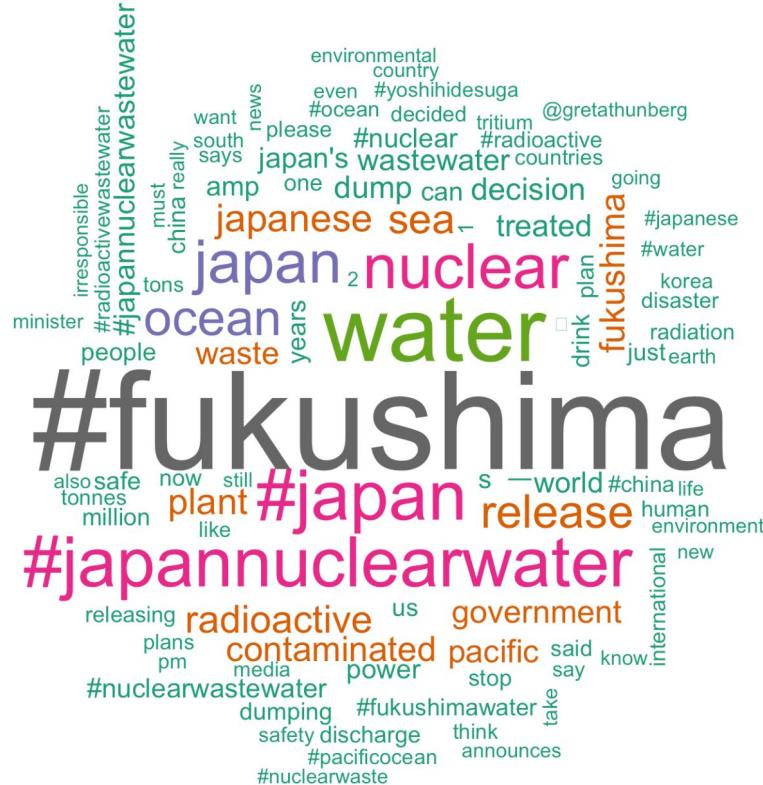
Japan Sentiment on Twitter

OVERALL SENTIMENT ANALYSIS ON TWITTER ABOUT JAPAN



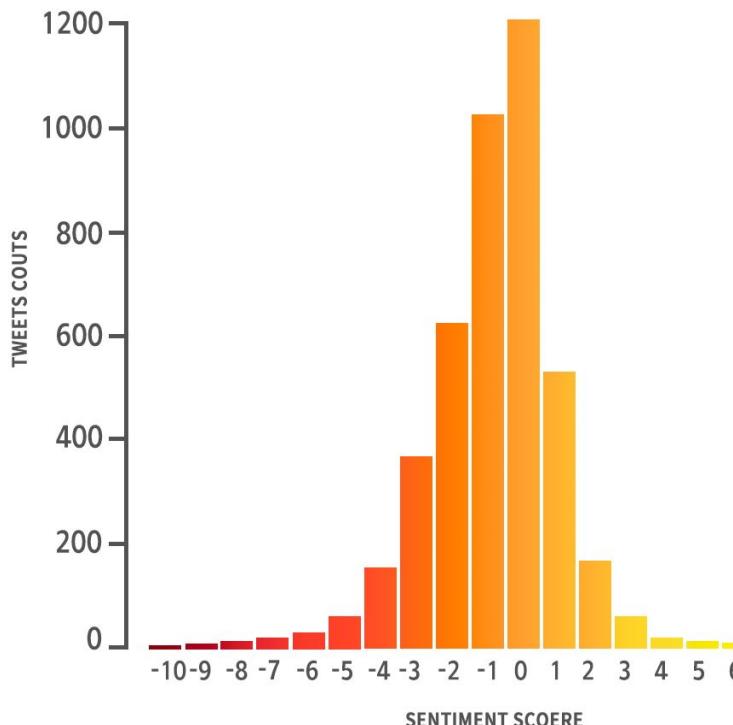
- Majority holds the neutral attitude
- The highest value of positive attitude is 5, highest negative attitude reached -7.
- Overall people holds negative view higher than that of positive one.

Overall Word Cloud & Frequency



Overall Sentiment on Twitter

OVERALL SENTIMENT ANALYSIS ON TWITTER ABOUT NUCLEAR WASTER WATER



POSITIVE

NEGATIVE

-Majority holds the neutral attitude

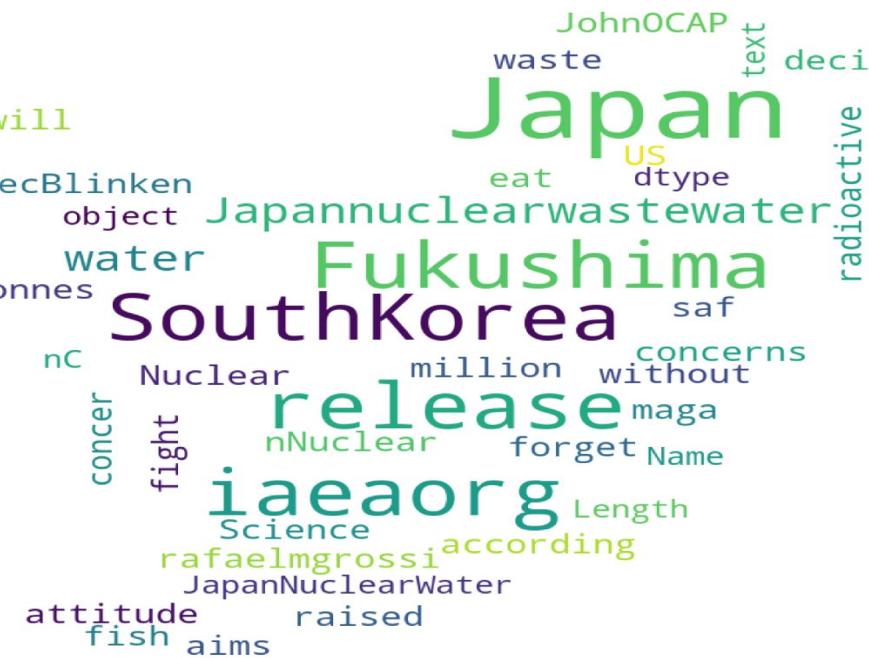
- Overall trend of people's view is still negative.

-The highest value of positive attitude is 6, highest negative attitude reached -10.

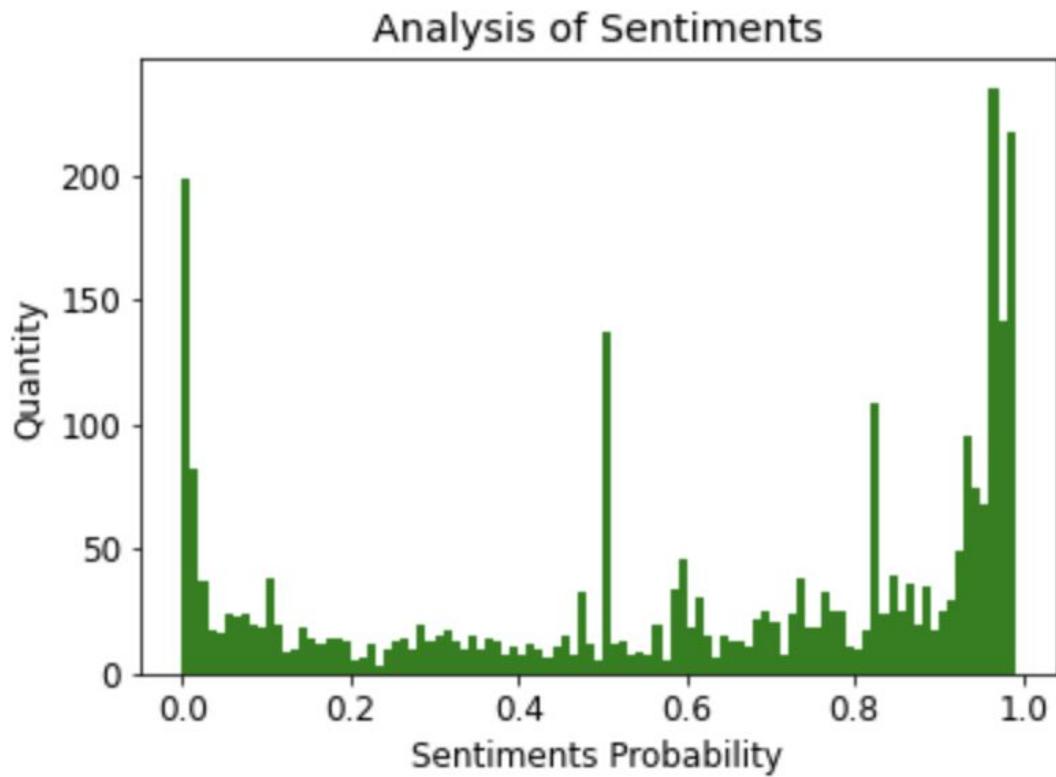
Platform comparison



From Weibo WordCloud, we can see that people focus on '核', '废水', '福岛', '美国', '排放'. From twitter, people focus on 'Fukushima', 'southkorea', 'release', 'Japannuclearwater'



Platform comparison

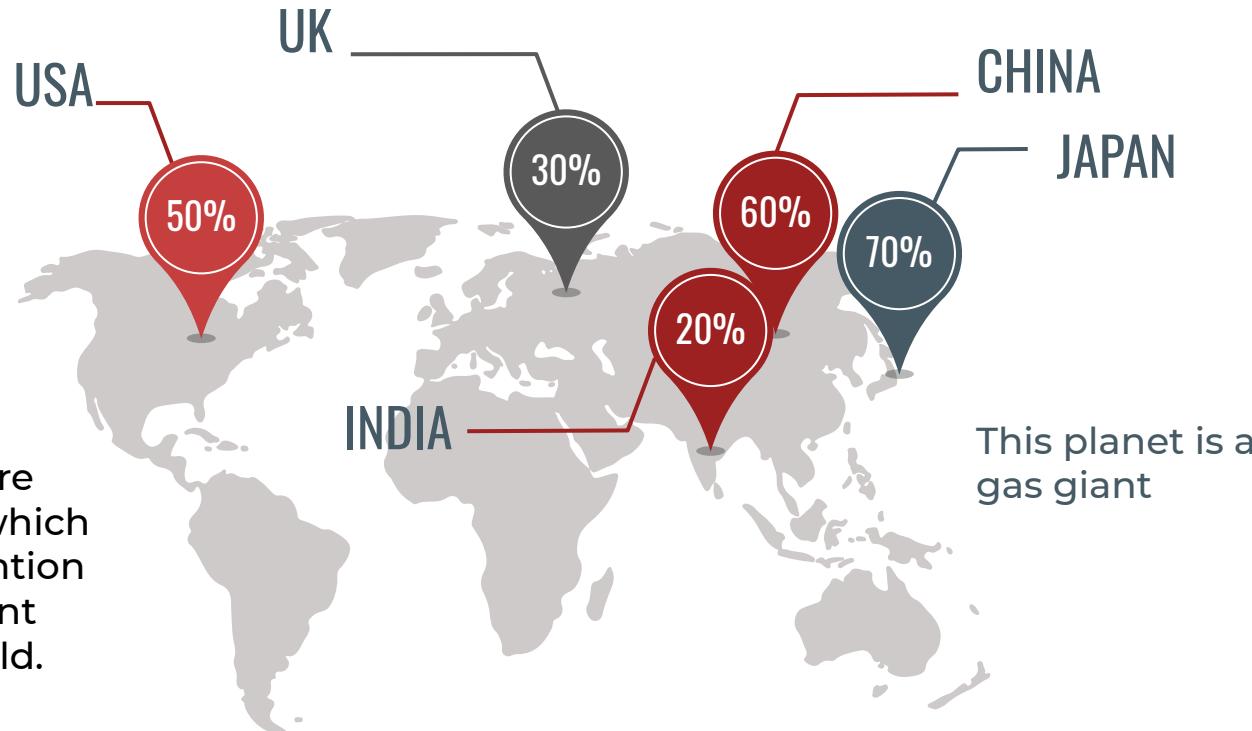


0—0.5 Negative

0.5-1.0 Positive

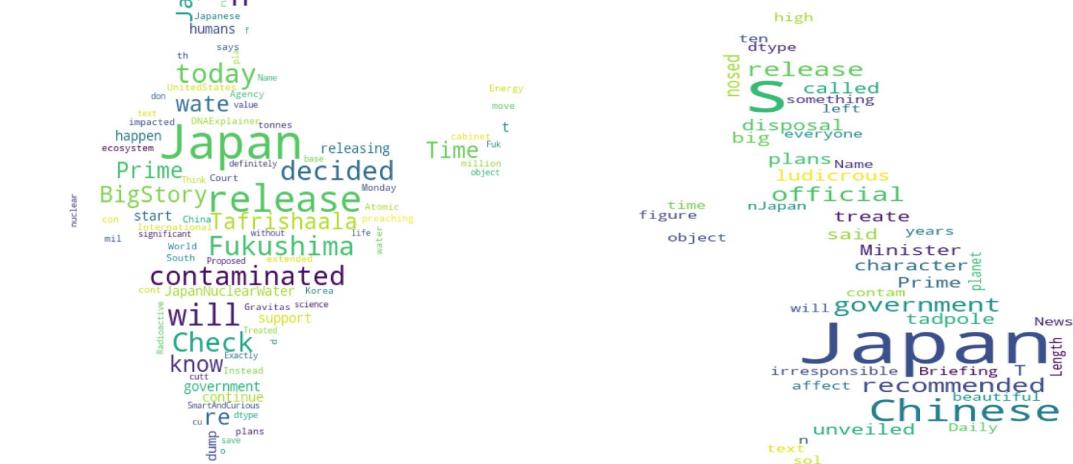
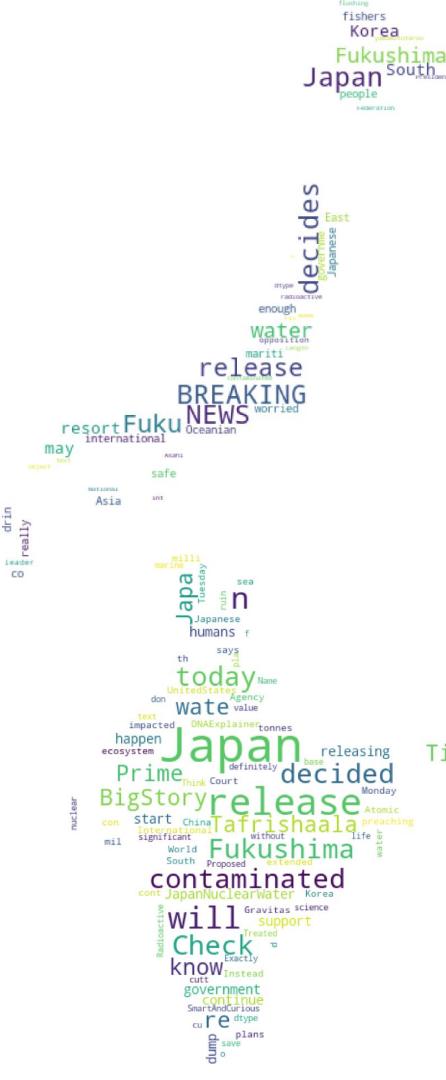
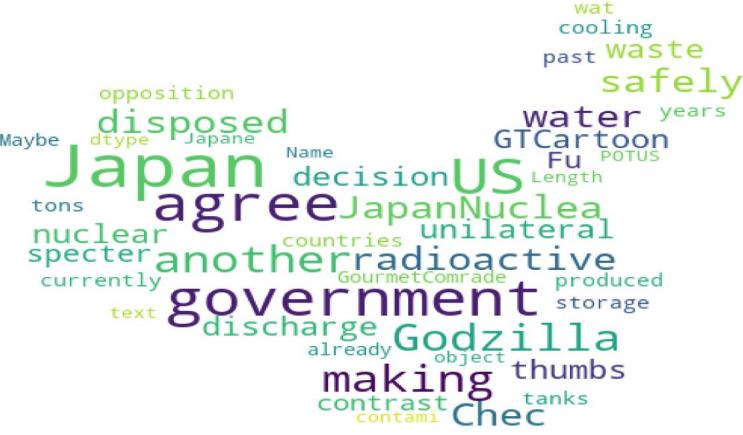
The score around 0 or 1 represents extreme emotion after analysis .

REGIONAL HEAT



Wordcloud

Tweets from China, Japan, US, UK on twitter



In twitter, we can also see Some keywords like ‘release’, ‘japan’, ‘japannuclear’ in China and England. However in Japan, the word ‘decides’, ‘release’ appear on worcloud. In USA, I also find ‘supported’ and ‘acceptable’.

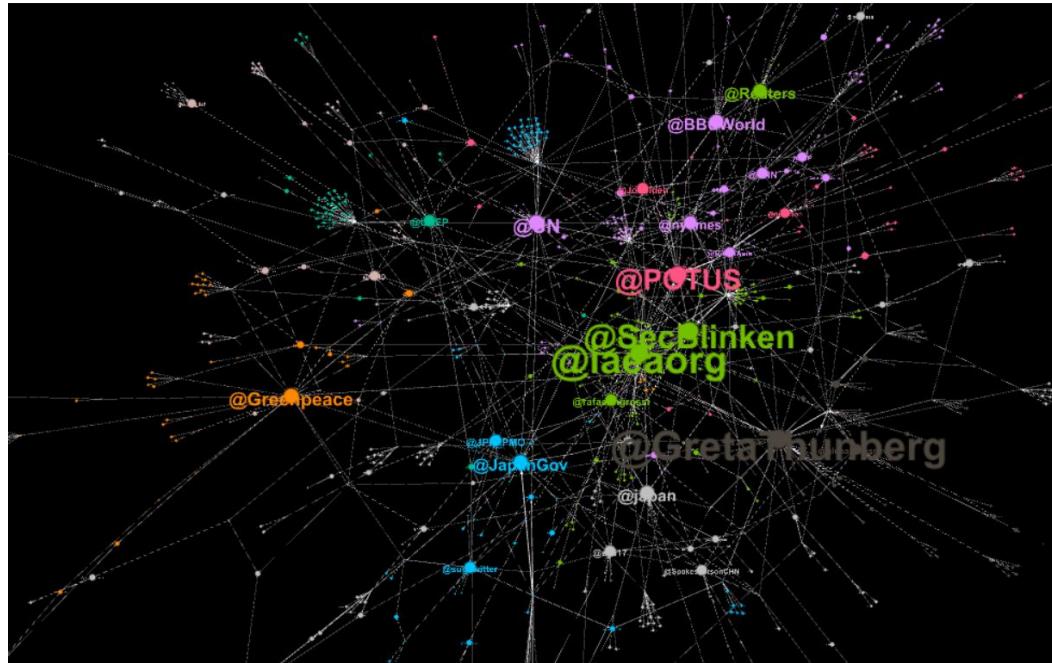
LDA model result

-----Lda-CountVectorizer_features 主题-----

- 主题 0 : 日本|吴江|提出|严正|交涉|废水|机构|召见|产品|不顾
- 主题 1 : 任豪|视频|央视|粉丝|记者|申杨|总台|网页|链接|废水
- 主题 2 : 视频|大海|收起|排入|专家|废水|新闻|人权|失望|日本政府
- 主题 3 : 影响|环球|核污染|资讯|机构|研究|显示|计算结果|废水|美国
- 主题 4 : 废水|日本|排放|福岛|日本政府|海洋|入海|排海|核电站|收起
- 主题 5 : 日本|废水|中国|太平洋|排核|世界|排放|事件|视频|全世界
- 主题 6 : 废水|日本政府|日本|影响|全球|收起|入海|美国|危及|道破
- 主题 7 : 国际|日方|废水|外交部|中方|处置|福岛|核电站|排海|反对
- 主题 8 : 日本|废水|美国|真的|人类|收起|国家|海洋|历史|核废料

From the result, most of people discuss about the harm of releasing nuclear waste water into ocean sea by Japan. They rejected and disappointed about the event. We also can see ‘任豪’ a pop star and his fans also involve this event.

Network Analysis



Twitter

User | Mention
A | B

Modularity

Bigger: was mentioned more
Color: Modularity, community

Network Analysis



1st group

9.01%

Western Media

UN: United Nations

Nikkei Asia: Located in London

AFP: Biggest News Agency

Network Analysis - Individual Twitter account analysis

Anis @anis_epis · 4月13日

Fukushima: #Japan approves releasing wastewater into ocean.
bbc.com/news/world-asi... via @BBCWorld



BBC NEWS

Fukushima: Japan approves releasing wastewater into ocean
Most experts say it's a normal and safe practice but environmentalists and locals are not happy.
© bbc.com

Reply Retweet Like Share

Why these media are mentioned frequently:

Release the news

Users comment on the news by retweets

Network Analysis



2nd group: Organization and people

@iaeaorg: IAEA - International Atomic Energy Agency 國際原子能機構

@rafaelmgrossi: Director General International Atomic Energy Agency

@SecBlinken: Secretary Antony Blinken 美國國務卿

Network Analysis - Individual Twitter account analysis

IAEA - International Atomic Energy Agency @iaeaorg · 4月13日

IAEA ready to support Japan on #Fukushima water disposal, Director General @RafaelMGrossi says.

bit.ly/3a5VB9Q



frank @waifai · 4月14日

even Trump's people wouldn't be this stupid. #Fukushima
#Nuclearwastewater #seafood #ocean #doom #japanNuclearWater #sin



GIF

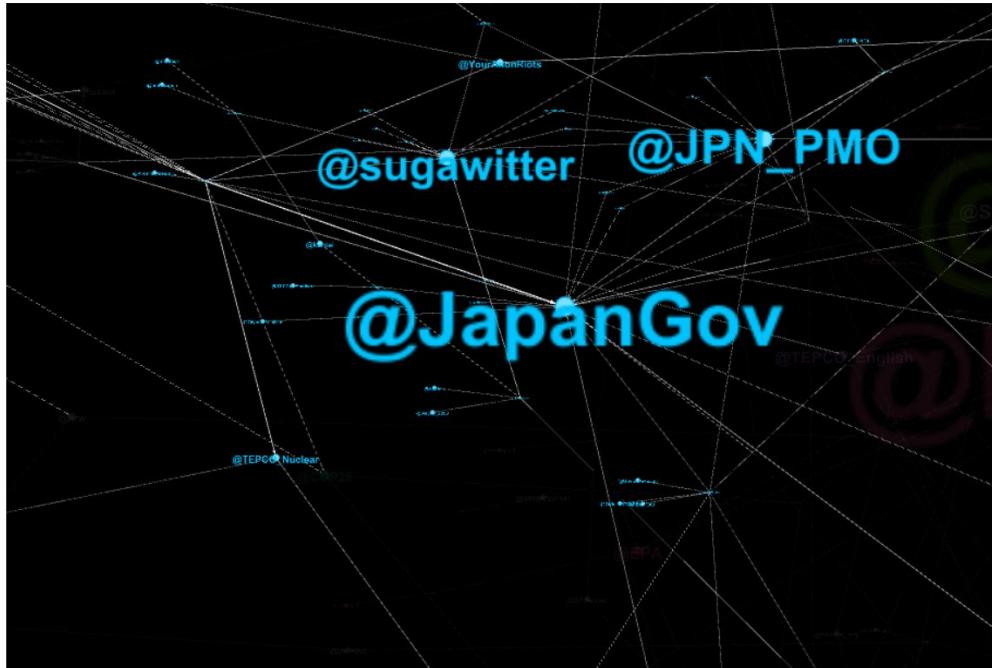
5 7

IAEA claims that they will support the #Fukushima water disposal

(In its tweets, it didn't use words like: Nuclear, Waste...)

People retweet this/@it to express opposite attitude.

Network Analysis



3rd group

Japanese Accounts

@sugawitter: 日本内閣総理大臣

@JPN_PMO: The official English account of Prime Minister's Office of #Japan

Network Analysis - Individual Twitter account analysis

Daniel Roche @DanTheRocheMan · 4月16日
@sugawitter @JPN_PMO please get #Fukushima Nuclear Power Plant to find a way to also filter out #tritium and #carbon14 out of contaminated water before making it purified water and dumping it into the ocean 😡

Baldassar Castiglione #FBPE @MilaZenji · 4月13日
Fukushima: Japan announces it will dump contaminated water into sea theguardian.com/environment/20...
#FukushimaDaiichi #Fukushima #JapanNuclearWater
#Japannuclearwastewater
Great! Dump your 🚰 into sea! Human idiocracy! Shame on you!
@kyodo_english @The_Japan_News @JapanGov

When people mention these Japanese accounts,

They tend to be angry

Network Analysis



Greta Thunberg ✅
@GretaThunberg

Bunny hugger

⌚ Sverige ⌚ ClimateEmergencyEU.org 📆 2018年6月 加入

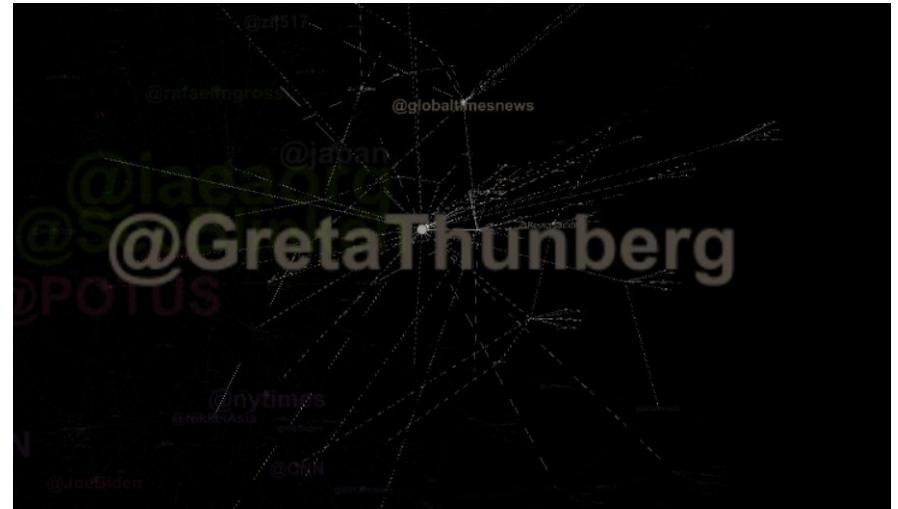
2,494 正在关注 499万 关注者

你关注的人中没有人关注

4th group

Greta Thunberg “瑞典环保少女”

She was mentioned nearly the most frequently



Network Analysis - Individual Twitter account analysis

Greta Thunberg @GretaThunberg · Apr 13
"Japan says it will release more than one million tonnes of contaminated water from the ruined Fukushima nuclear power station back into the sea"

Japan to release contaminated Fukushima water into sea
Government pledges to make water safe before release, but plan draws swift condemnation from China, South Korea.
🔗 aljazeera.com
1.6K 3.2K 6.6K



Greta Thunberg “瑞典环保少女”

She only mentioned the “contaminated water” for one time, without showing her attitude.

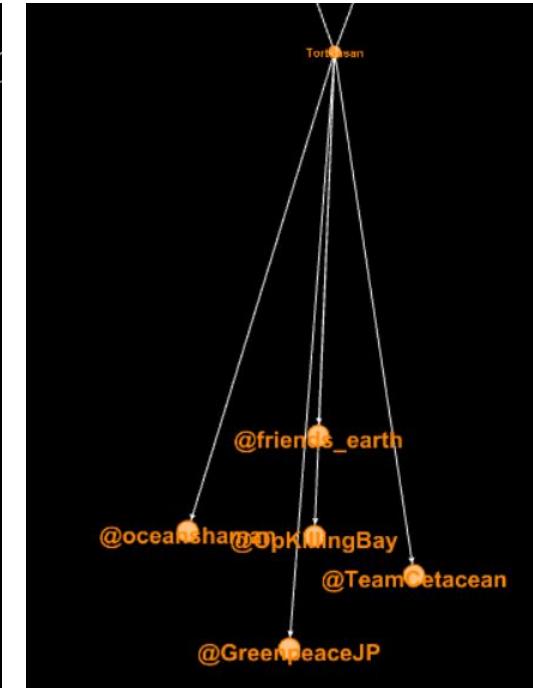
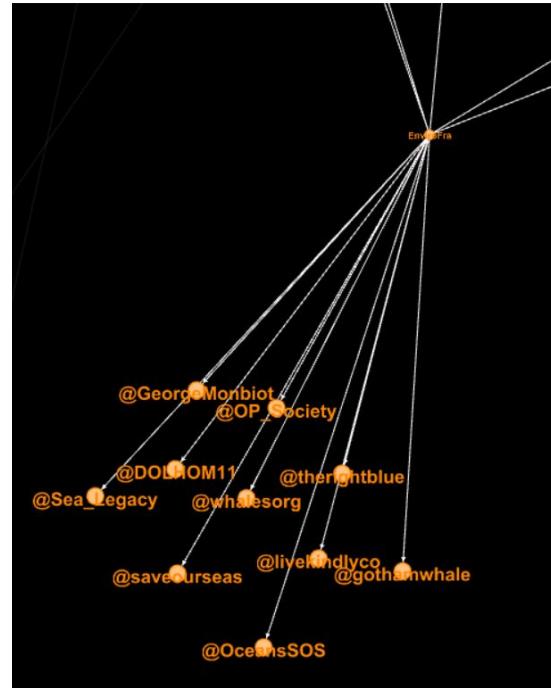
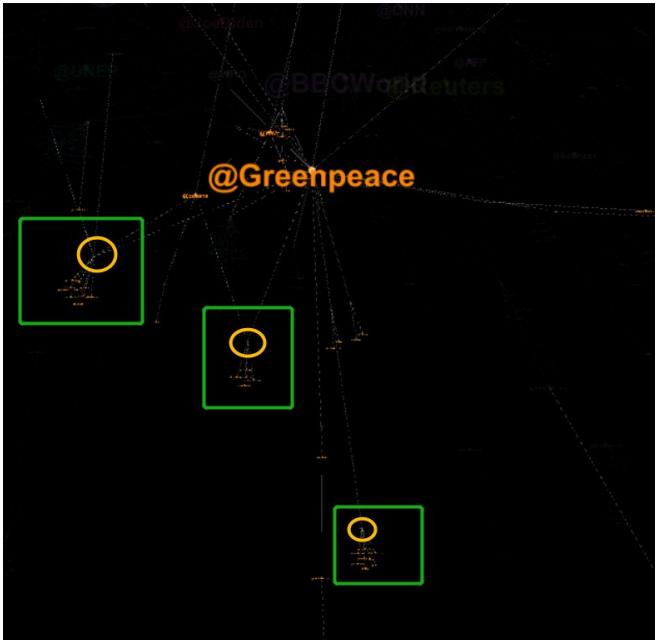
Then people asked her why she didn't say anything to this.

YY Lin @JackYYLin1 · 7小时
回复 @TheDailyShow 和 @GretaThunberg
She closed eyes on **Japan** releasing the nuke water into the sea!
AI Westside @awrd60 · 8小时
回复 @GretaThunberg
Have you done anything on **Japan**'s nuclear water thingy?
Lengfeng @lengfen85506049 · 9小时
回复 @Reuters 和 @GretaThunberg
The irony: you didn't do anything to **Japan**, which is dumping nuclear waste into the sea

Network Analysis

5th group

Save the Earth!!
Ocean Lover, Whale Lover



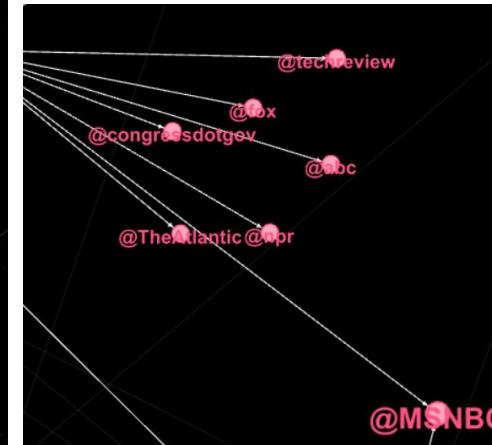
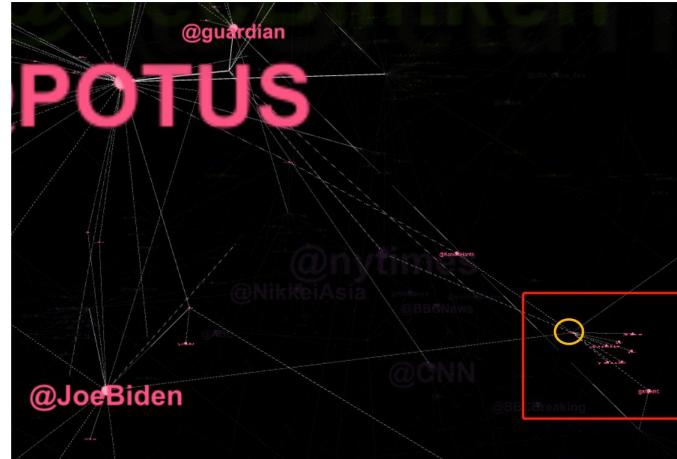
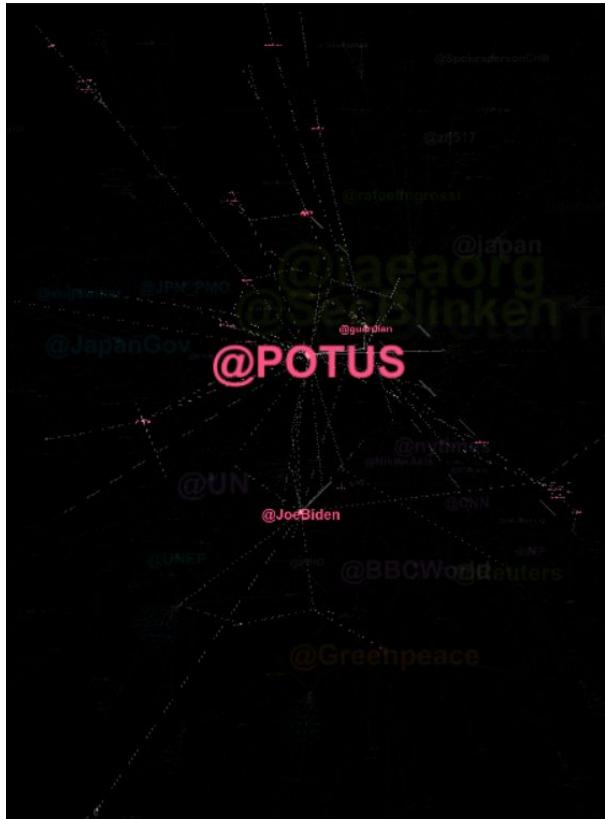
Network Analysis

6th group

Joe Biden & Media

President and the media which are mentioned by users at the same time.

The media like fox which stands in the same side with Biden.



Weibo network



Weibo network

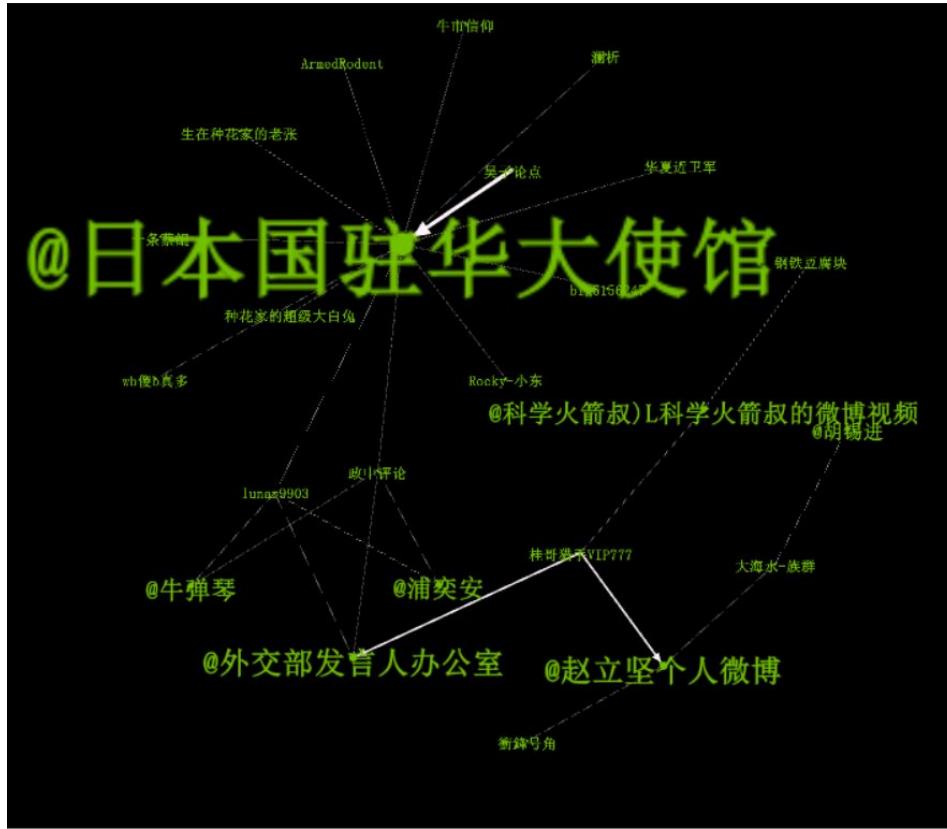


Official accounts

央视网 人民日报 (C位)

They are repost by other official media accounts of school, departments of government etc.

Weibo network



Diplomatic relations
Wars without fire

赵立坚 Foreign Ministry Spokesperson

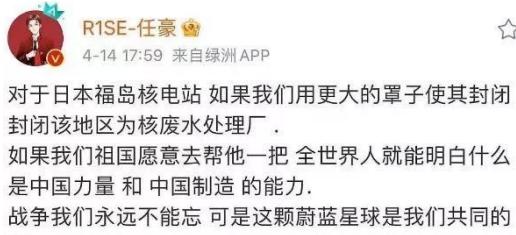
Weibo



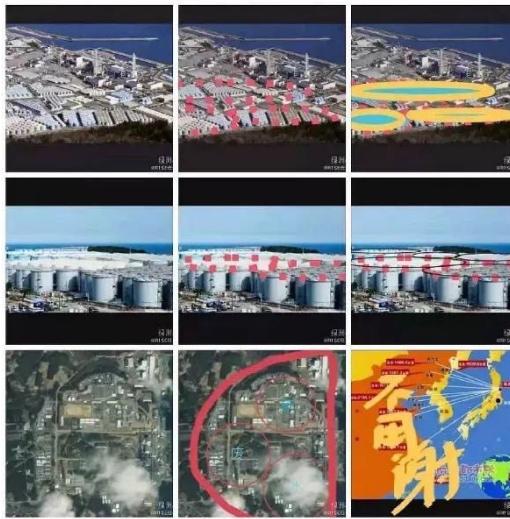
Idol who supports Japan

任豪, a popular idol, who is famous for his scandals.

Weibo - Individual Twitter account analysis



(想法很简单 要杠你就赢) ☺绿洲



任豪

Support for dumping the waste water
Making people angry and comment
on him.

An unexpected intersection point of
Weibo & Twitter.

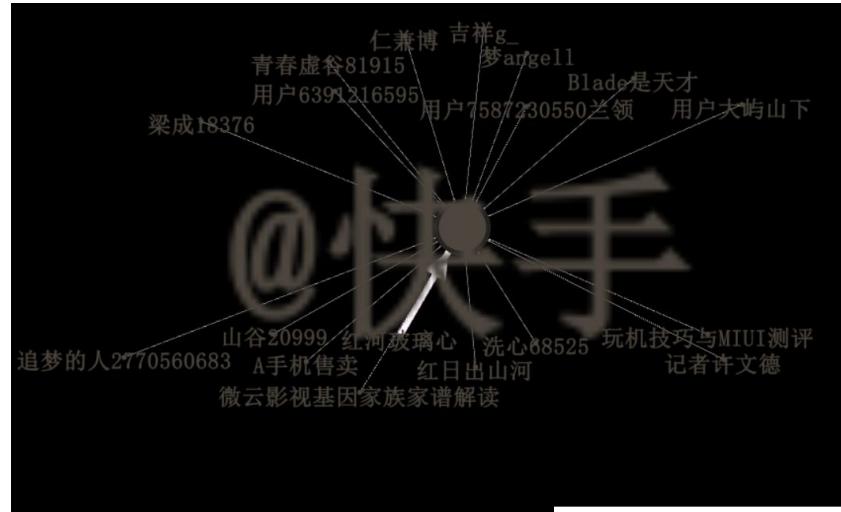


任豪が热搜1位で爆笑してしまった

翻译推文

19:03 · 2021/4/14 · Twitter for Android

Weibo



Video News

A trending of journalism and communication with good repost volume.

Weibo



Accounts of the same organization

Reposting the content from the same organization.

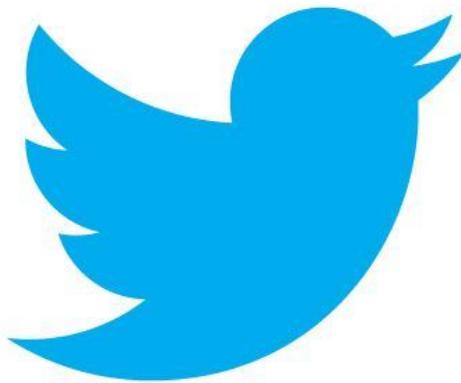
The organization brings them together to become a group.



04 Conclusion

Conclusion, Discussion,
Q&A

Conclusion



- Not as emotionally charged as that of the Chinese, and it is more environmentalists and politicians who are speaking out.
- Western media on Twitter shows a hugging trend.
- US Twitter users show a supportive and acceptable attitude towards the nuclear wastewater released decision.

Conclusion

- Netizens show a variety of strong emotions due to their pride in their own country
- Chinese official media are consistent with the state stance in their speech.
- Real experts in the related fields were deprived of the opportunity to express their opinions, forming a new echo chamber.



THANKS

