



HOKKAIDO  
UNIVERSITY

# A Scientometric and Text Mining Approach to Identify the Research Hotspots and Emerging Topics on Himalaya Using the Web of Science Records



9th Annual  
**Global TechMining**  
**Conference**  
2019.10.17 • Atlanta, Georgia

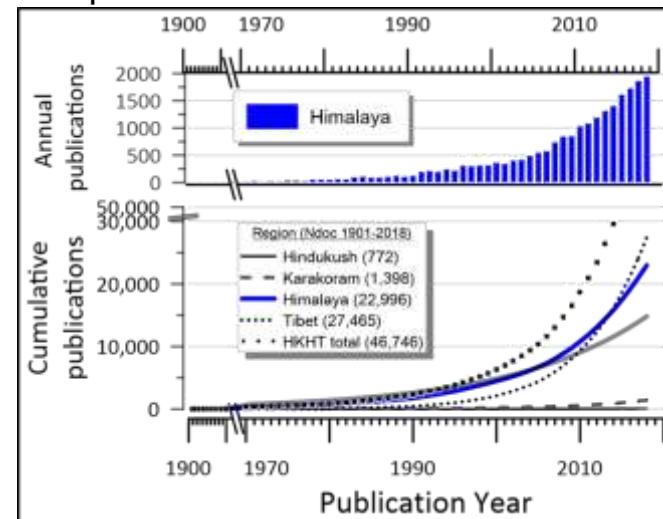
The logo for the 9th Annual Global TechMining Conference. It features a circular icon on the left containing a stylized molecular or network structure. To the right of the icon, the text "9th Annual" is in a small, dark font. Below it, "Global TechMining" is written in large, bold, red letters, and "Conference" is in smaller, bold, green letters below it. At the bottom, the date "2019.10.17" and location "Atlanta, Georgia" are listed in a smaller, dark font.

**Pitambar Gautam**  
*Creative Research Institution*  
*Hokkaido University, Sapporo, Japan*

## Target: Himalaya-Karakoram-Hindukush-Tibet Region [1]



## Exponential Growth of Publications



## Objectives:

- Bibliometric overview (Publications volume: 1901-2018)
- Science mapping (high impact research: 1994-2018)

## Data Source & Types: Web of Science Core Collection (CC)

### Search Topics and Search Strings:

- **Himalaya:** TS=him\*lay\*
- **Tibet:** TS=(tibet\* OR xizang)
- **Karakoram:** TS=(Kar?kor\* OR Kara-kor\*)
- **Hindukush:** TS=((hind\*kus\* OR hindu-kus\* OR hind-kus\*) NOT "hind kusht")

### Period & Document Types:

1901-2018 art, rev, lett, note

1994-2018 Field Sciences; art, rev; Top10% (WOS→InCites)

## Himalaya: Country level data

Rank	Country	Ndoc	% share
1	INDIA*	10,522	45.76
2	USA	3,969	17.26
3	PEOPLES R CHINA*	3,629	15.78
4	ENGLAND	1,441	6.27
5	GERMANY	1,299	5.65
6	FRANCE	1,142	4.97
7	NEPAL*	987	4.29
8	PAKISTAN*	832	3.62
9	CANADA	788	3.43
10	JAPAN	764	3.32
11	AUSTRALIA	665	2.89
12	SWITZERLAND	641	2.79
13	ITALY	602	2.62
..	BHUTAN*	131	0.57
..	BANGLADESH*	70	0.3
..	MYANMAR*	38	0.17
..	AFGHANISTAN*	4	0.02

\* Countries directly related to HKHT region

Analytical tools: WOS (Analyze Results) & InCites (Clarivate Analytics); VantagePoint (Search Technology Inc.); VOSviewer (Leiden University)



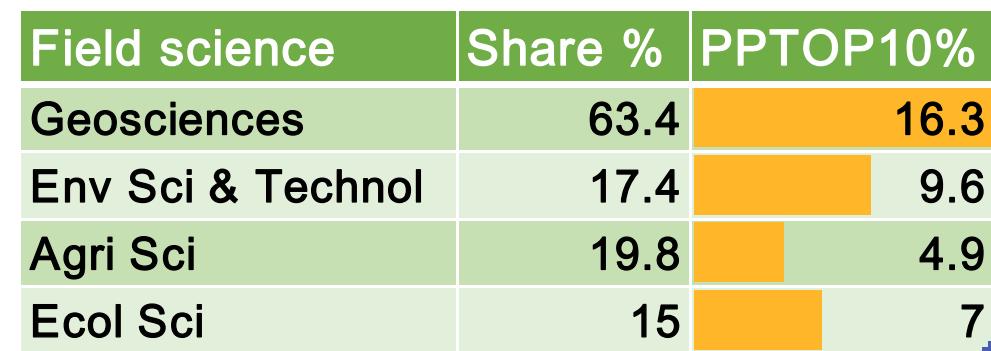
HOKKAIDO UNIVERSITY

# HKHT region 1901-2018 field sciences: Four factors (39 WOS SCs)

Field Sciences	Web of Science Category	HKHT region	
		% share	Ndoc
Geosciences	Geosciences, Multidisciplinary	22.64	10581
	Geochemistry & Geophysics	12.94	6047
	Meteorology & Atmospheric Sciences	8.84	4131
	Geography, Physical	6.94	3242
	Geology	5.09	2378
	Remote Sensing	1.9	887
	Paleontology	1.9	886
	Mineralogy	1.63	763
	Imaging Sci & Photogr Technology	1.02	477
	Engineering, Geological	0.63	295
	Engineering, Petroleum	0.11	50
	Engineering, Ocean	0.02	10
	Environmental Sciences	9.47	4429
	Water Resources	3.62	1694
Environmental Sciences & Technologies	Engineering, Civil	1.28	598
	Engineering, Environmental	1.13	527
	Limnology	0.4	187
	Agricultural Engineering	0.24	112
	Plant Sciences	7.21	3370
	Agronomy	1.71	798
Agricultural Sciences	Soil Science	1.51	704
	Agriculture, Multidisciplinary	0.98	458
	Food Science & Technology	0.9	423
	Agriculture, Dairy & Animal Science	0.73	343
	Mycology	0.68	320
	Integrative & Complementary Medicine	0.63	294
	Horticulture	0.42	195
	Nutrition & Dietetics	0.22	102
	Materials Science, Paper & Wood	0.03	13
	Ecology	5.03	2349
	Zoology	2.7	1261
	Evolutionary Biology	1.98	926
Ecological Sciences	Forestry	1.46	684
	Biodiversity Conservation	1.44	674
	Entomology	0.93	436
	Marine & Freshwater Biology	0.64	299
	Oceanography	0.37	174
	Ornithology	0.32	150
	Fisheries	0.18	84

## Himalaya

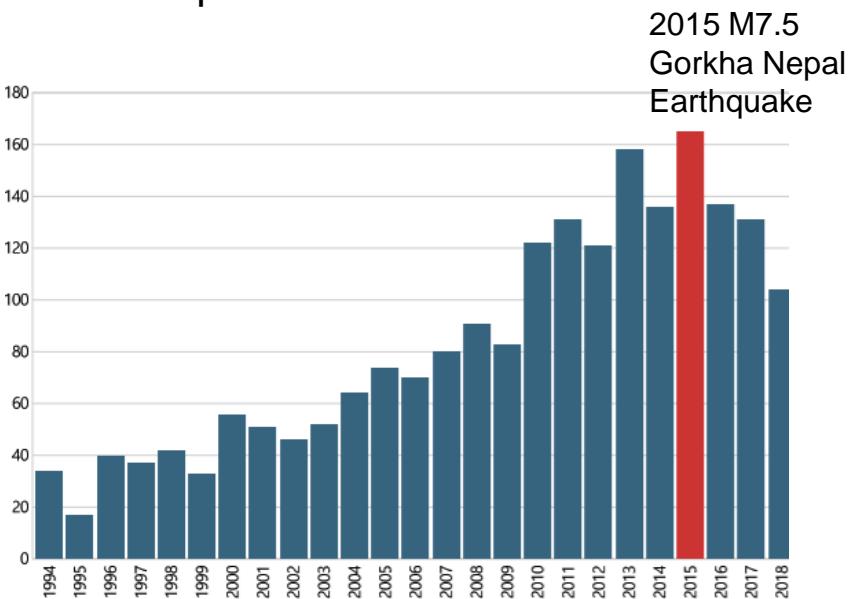
1994-2018 four dominant factors  
(Shares of field sciences factors  
and their proportion of TOP10%  
documents)



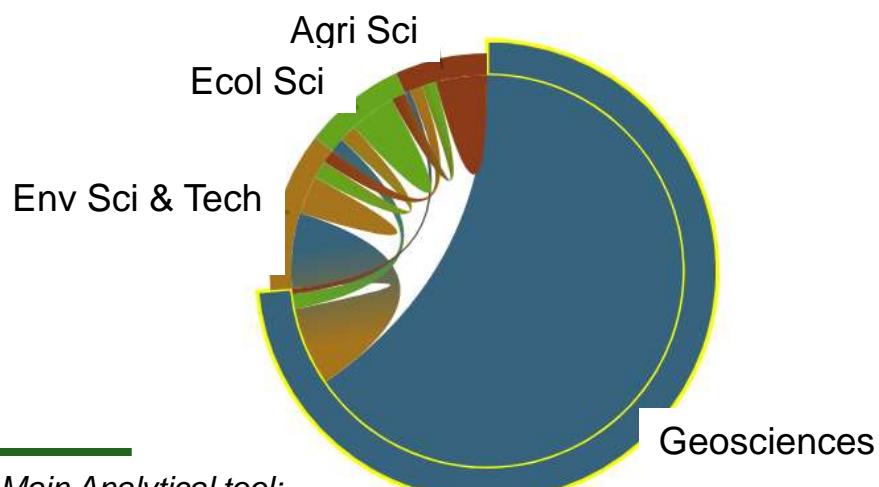
# High Impact (TOP10%) Field Sciences Publications on Himalaya

3

## Top10% Annual counts

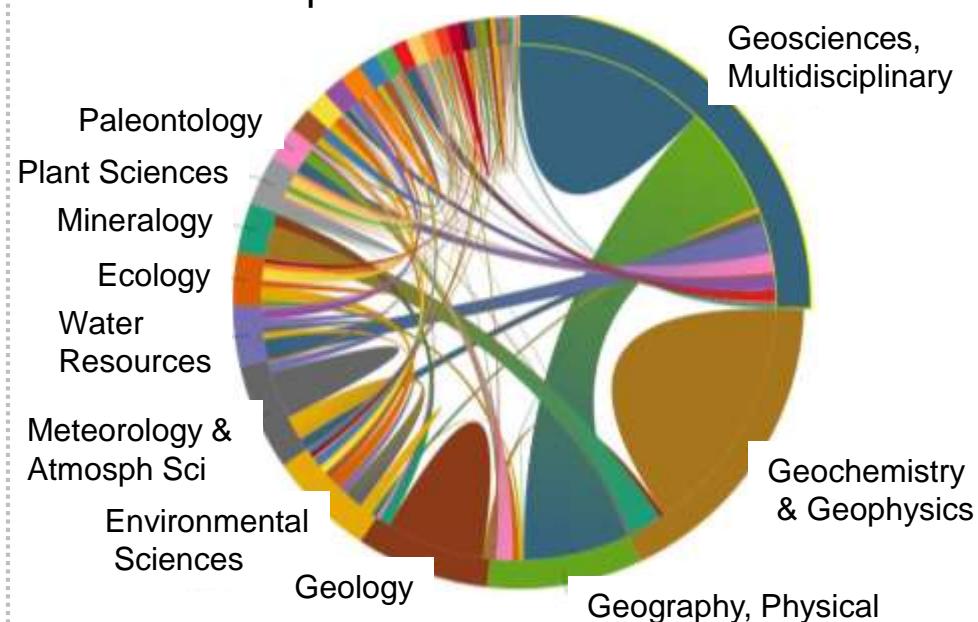


## Top10% Field Sciences 4 Factors

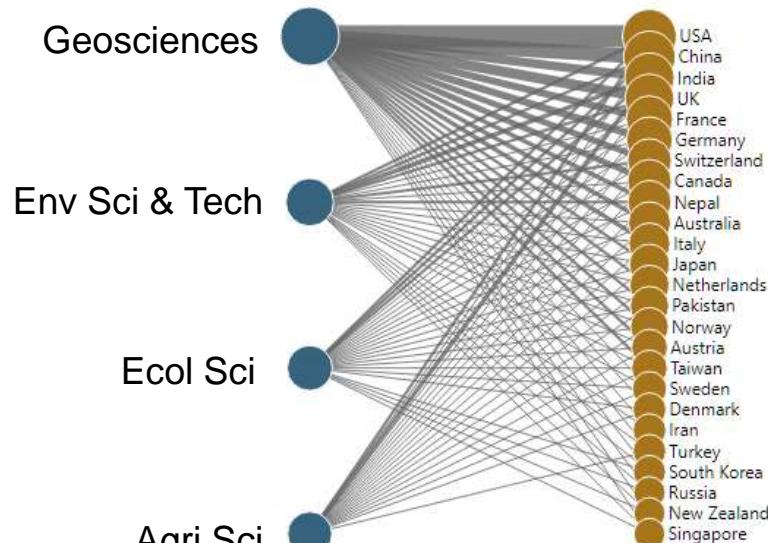


Main Analytical tool:  
VantagePoint

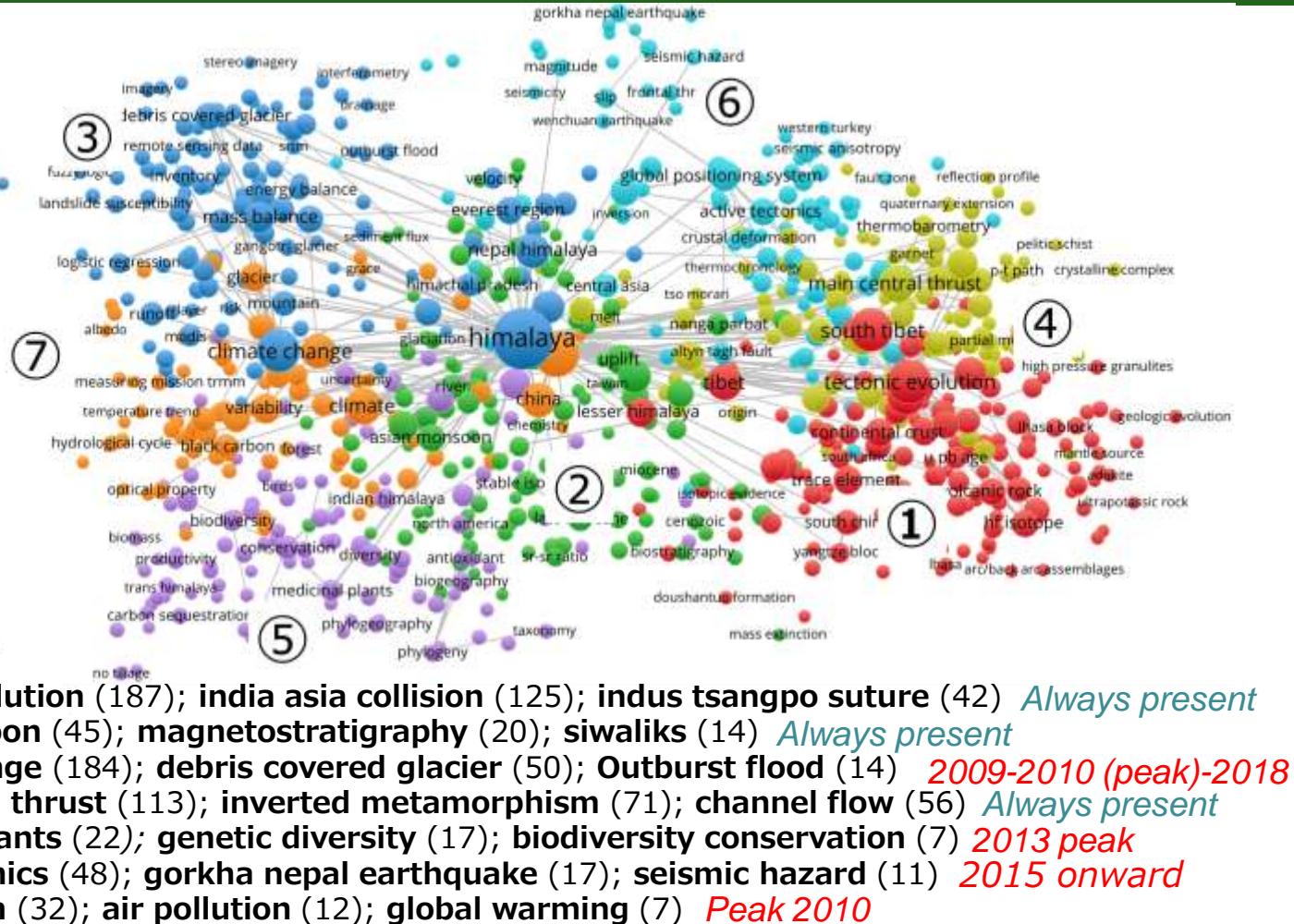
## Top10% Prolific WOS SCs



## Node-edge diagram (4 Factors – countries)



Co-occurrence  
of mainly  
noun phrases  
among  
keywords (all  
types)



## Concluding Remarks:

- HKHT Research publications (1901-2018), dominated by the field sciences, are largely cross-disciplinary, cross-institutional and highly international collaborative.
- Experimental analysis of high impact documents (1994-2018) on Himalaya reveal the diversity of continued & emerging themes. It proves the potential use of scientometric/text mining tools.

Analytical tools:

VantagePoint & VOSviewer



HOKKAIDO UNIVERSITY