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6th Asia-Oceania Group on Earth Observations (AOGEO) Workshop
May 29-31, 2023 Macau, China
Capacity Development of GeoInformation
Technology Practical Exploration in Wuhan University
Xi Li, Wuhan University
AO GEO
Earth Observations for Asia-Oceania
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# Content

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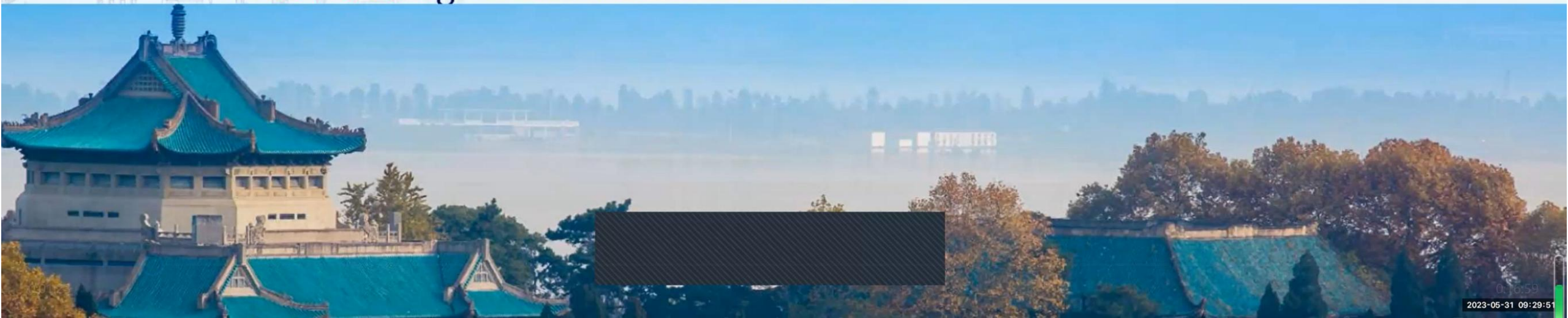
3 GEO Night Light and UN internship

4 Summary

## International Academy on GeoInformation

- Recruiting international students of geospatial technology
- Supporting Wuhan University in building a world-class university and creating a world-class discipline
- Forming a global cooperation mechanism for the geospatial information industry under the UN-GGIM global education framework



## International Academy on GeoInformation

- Beginning 2015, first development plan and detailed construction plan
- December 2015, presentation at UN-GGIM working meeting at the UN headquarters in New York
- September 2016, the first batch of students were enrolled, with 12 masters and 5 PhDs
- April 2017, SCGI dual master program with Thailand Ministry of Science and Technology
- October 2020, Timo Balz, a German professor at the laboratory, was appointed as the associate dean of the institute

# International Academy on GeoInformation

LIESMARS

武漢大學測绘学院
SCHOOL OF GEODESY AND GEOMATICS

武漢大學遥感信息工程学院
School of Remote Sensing and Information Engineering, Wuhan University

武漢大學资源与环境科学学院
School of Resource and Environmental Sciences, Wuhan University

CENTER NSS
武汉大学卫星导航定位技术研究中心
国家卫星定位系统工程技术研究中心

武汉大学城市设计学院
SCHOOL OF URBAN DESIGN
WUHAN UNIVERSITY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# IAG Enrollment in 2022

## Origin of IAG students

- The China-Algeria Satellite Program, the China-Thailand SCGI Dual Master's program and individual students from Pakistan are the main sources of international students.
- European students come via the Dragon Program, Sino-German Dual Master's Program and through the Summer School
- Others are mainly from Africa or Belt and Road countries.

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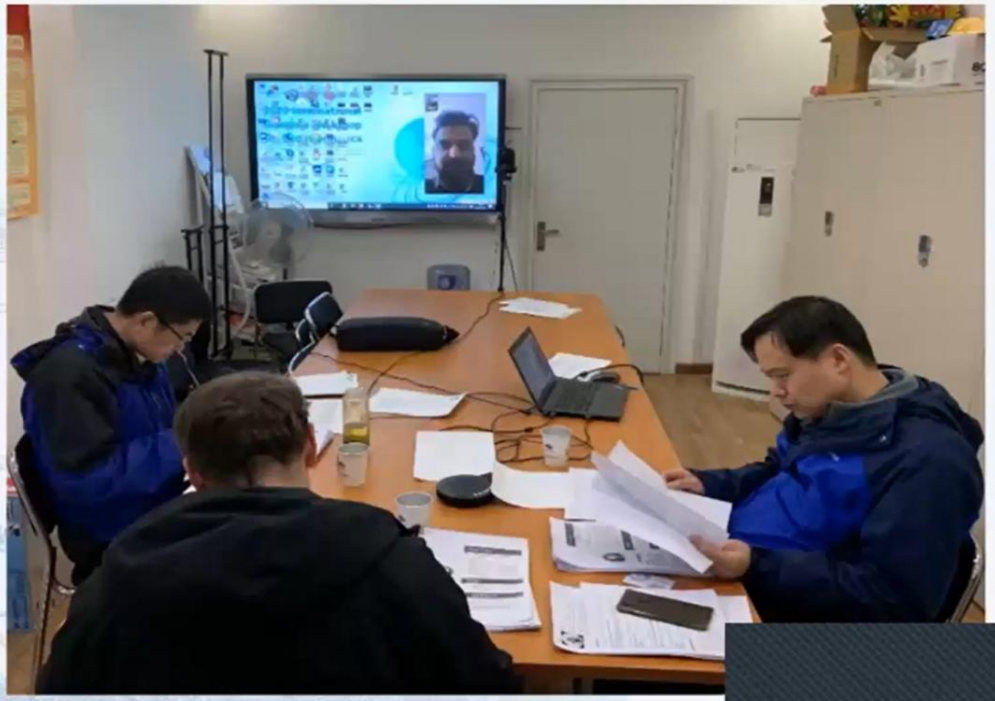
## Student Selection of IAG

- IAG receives 100+ applications each year
- Students are selected during January - March



# Student Training

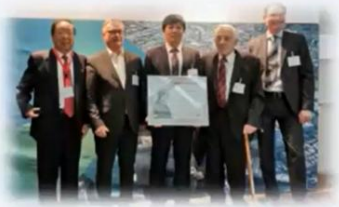
## Diverse and international team

### Highly qualified lecturers

- Introduced six new foreign faculty members for teaching, with overall now 26 courses available in English each year.

### Team of young teachers

- From experienced Academicians to young teachers, a team is formed from integrated mentorship relations.



### CEOs teaching case studies

- Since 2018, 14 CEOs and bosses taught and shard their industry experiences to help our students keeping an ear to the industry.

- Creating a diversified and innovative teaching & research culture to ensure the best supp[redacted]

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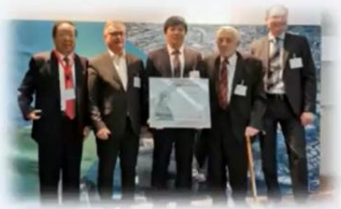

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## Education resources

- Each year, 24 full English courses are offered, covering a wide range of disciplines such as earth science, geophysics, mapping science and technology, and geography
- More than 10 famous overseas scholars come to teach regularly every year

Daniel A. Griffith

Texas State University, Spatial statistics and analysis

Wolfgang Kainz

Prof. University of Vienna, Austria.

Contemporary geoinformation technology

Orhan Altan

Istanbul Technical University

Disaster management

Jean-Pierre Barriot

University of French Polynesia

Contemporary geoinformation technology

Marcello Pellilo

University of Venice, Italy

Machine learning

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## International Doctoral Forum

- Since 2017, International Doctoral Forum on Geospatial Information Science have been held every year
- The forum is held in cooperation with Peking University and universities in Hong Kong for the International Doctoral Forum on Geospatial Information Science.

## Outstanding students of IAG

- **Prosper Washaya** from Zimbabwe, is working as remote sensing engineer at iSpatial in Deqing, China, after graduating
- **Neema Simon Sumari**, a PhD student from Tanzania, opened her own company in Tanzania after graduating
- **Chikondi Chisenga**, from Malawi, has produced rich results in the field of geophysical inversion and geodynamics. He has published more than 10 SCI papers

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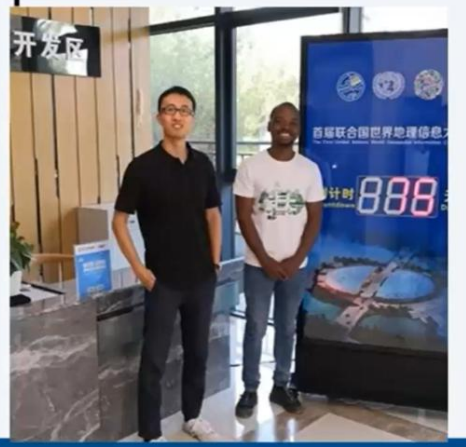


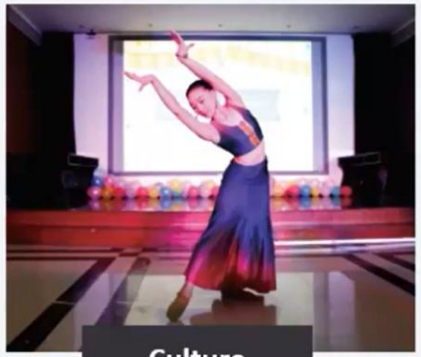
## International GeoInformatics Summer School(IGSS)

The GeoInformatics Summer School offers motivated university students, graduates and technicians an international and strongly academic summer session where outstanding lecturers and young talents meet to explore new ideas

# Principle of IGSS

**Knowledge**

2 or 3 short Courses;
Academic reports;
Lab operations;
Group working;
Course presentations



**Culture**

Ice-breaking;
Cultural Show;
Museums visiting

**Friendship**

Friendship generates in this multi-cultural environment

**Volunteer**

Full understanding of Teamwork, Contribution and Cooperation

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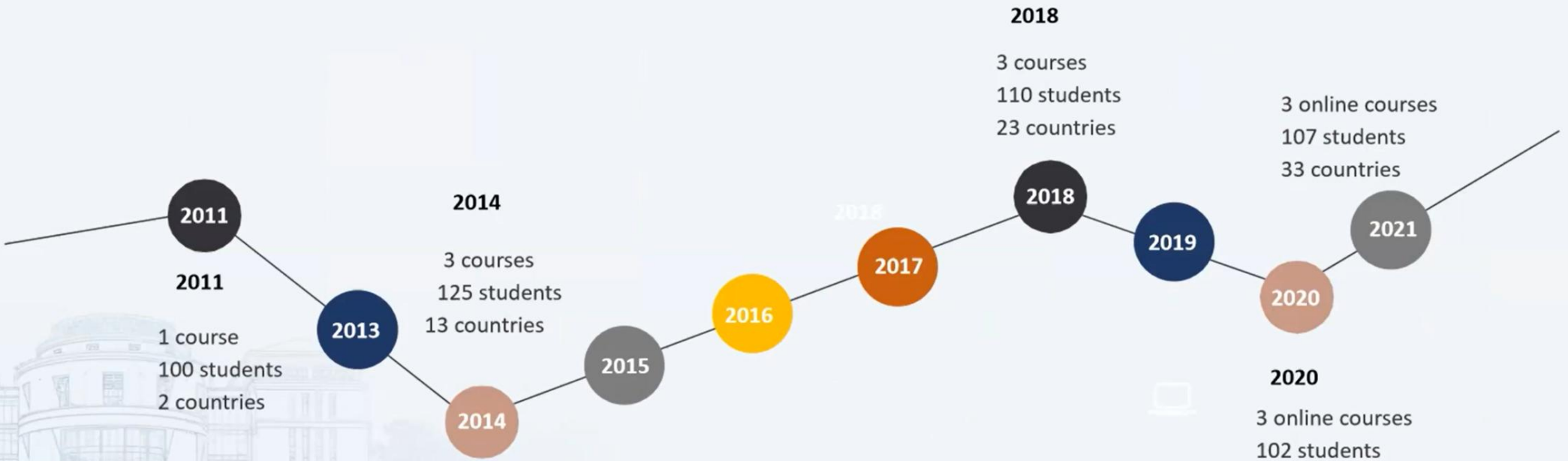
# History of IGSS

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# History of IGSS

| Year | Courses | Lecturers | Students/ Countries |
|---|---|---|---|
| 2011 | Spatial Statistics in Practice | Prof. Denniel Griffith ; Prof. Bin Li | 100/2 |
| 2013 | Spatial Statistics in Practice<br>Microwave Remote Sensing | Prof. Denniel Griffith; Prof. Bin Li;<br>Prof. Timo Balz | 170/5 |
| 2014 | Spatial Statistics in Practice,<br>Geospatial Service<br>Open Source Mapmaking | Prof. Denniel Griffith; Prof. Bin Li;<br>Prof. Wu Huayi;<br>Dr. Harri Kaartinen; Dr. Jorge Gustavo Rocha; | 153/13 |
| 2015 | Spatial Statistics in Practice,<br>Spatial-Temporal Big Data Analytics | Prof. Denniel Griffith; Prof. Bin;<br>LiProf. Peng Yue | 135/8 |
| 2016 | BDS/GNSS High Precision Positioning<br>Geospatial Data, Algorithm and Model<br>Night-Time Light Remote Sensing | Prof. Niu Xiaoji; Prof. Lou Yidong;<br>Prof. Wu Huayi; Dr. Xi Chen;<br>Dr. Xi Li | 70/15 |

Courses Lecturers Students/ Countries

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# History of IGSS

| | Courses | Lecturers | Students/ Countries |
|---|---|---|---|
| 2017 | Advanced Topics on Remote Sensing, 3D Modeling,<br>Ubiquitous Positioning | Dr. Sisi Zlatanova;<br>Prof. Ruizhi Chen;<br>Prof. Le Wang | 85/16 |
| 2018 | Point Clouds Processing<br>DSMs generation from SAR imagery<br>3S and Big Data for Research | Prof. Bisheng Yang;<br>Dr. Mattia Crespi; Dr. Andrea Nascetti;<br>Dr. Yin Li | 110/23 |
| 2019 | Surface motion estimation from SAR<br>Ubiquitous Positioning<br>Machine Learning | Prof. Timo Balz;<br>Prof. Chen Ruizhi;<br>Prof. Marcello Pelillo | 122/25 |
| 2020 | Night-time Light Remote Sensing<br>Geospatial Big Data Computing<br>Machine Learning | Prof. Xi Li; Prof. Xiaolin Zhu;<br>Prof. Xi Chen; Prof. Zhenlong Li; Prof. Marcello Pelillo | 102/17 |
| 2021 | Geospatial Big Data Computing<br>Machine Learning<br>Multi-temporal SAR Interferometry | Prof. Zhenlong Li;<br>Prof. Marcello Pelillo;<br>Prof. Timo Balz, Prof. Mingsheng Liao,Prof. Lu Zhang | 107/33 |
| | Courses | Lecturers | Students/ Countries |

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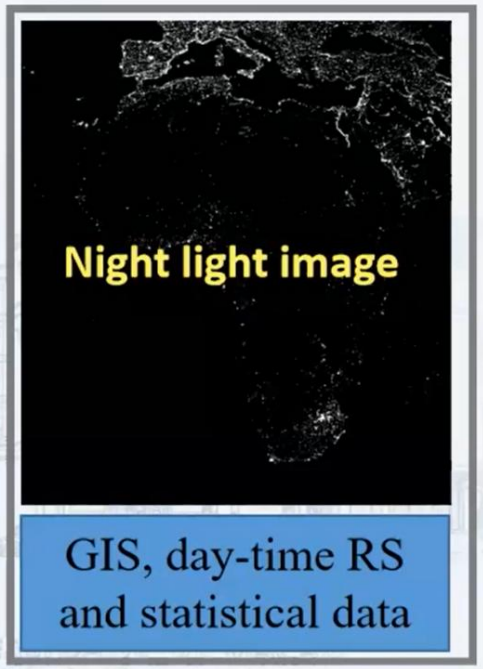
## GEO Night Light and UN Internship

- Night light is related to >20 SDG indexes
- GEO night light is a Pilot Initiative of GEO Work Programme
- GEO night light is to evaluate SDG indexes with night light images and other data



## GEO Night Light and UN Internship

- GEO Night Light was implemented under GEO collaboration between Wuhan University and United Nations Satellite Centre (UNOSAT)
- Under GEO Night Light, two students from Wuhan University to UNOSAT as interns under GEO Night Light

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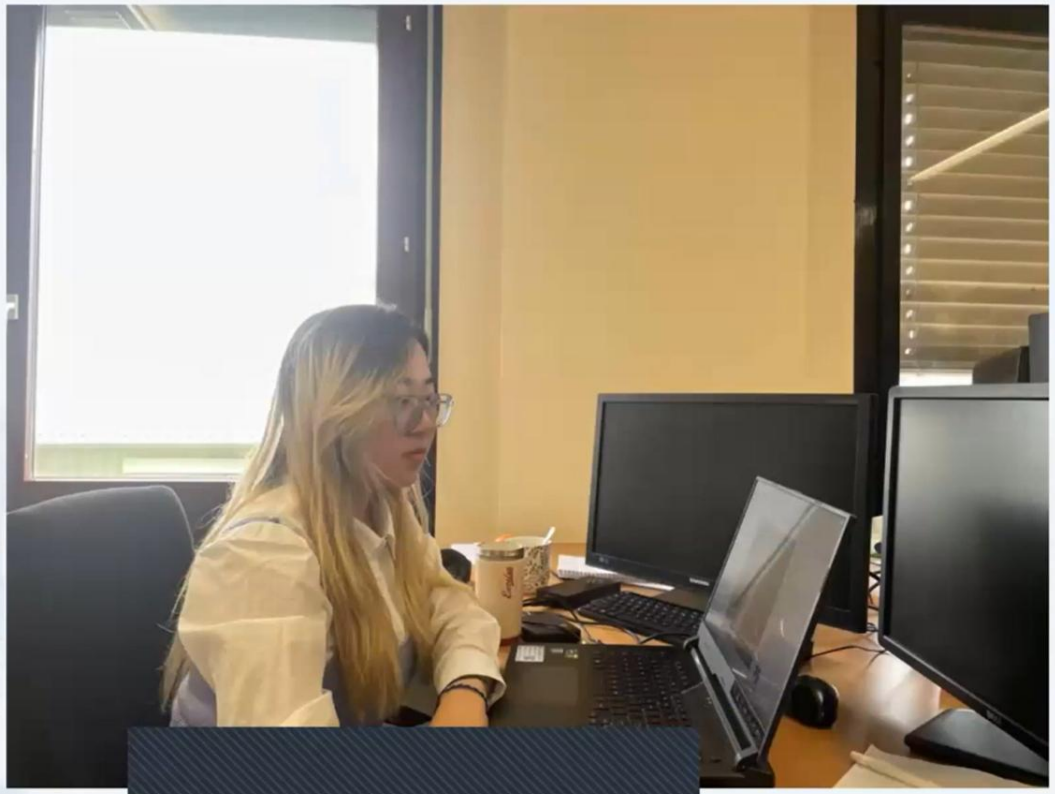
## The UNOSAT interns were trained how to work in UN

- International Communication under multi-cultural enviroment
- Selecting important topics for analysis
- Writing UN reports



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## Attending GEO International Women's day

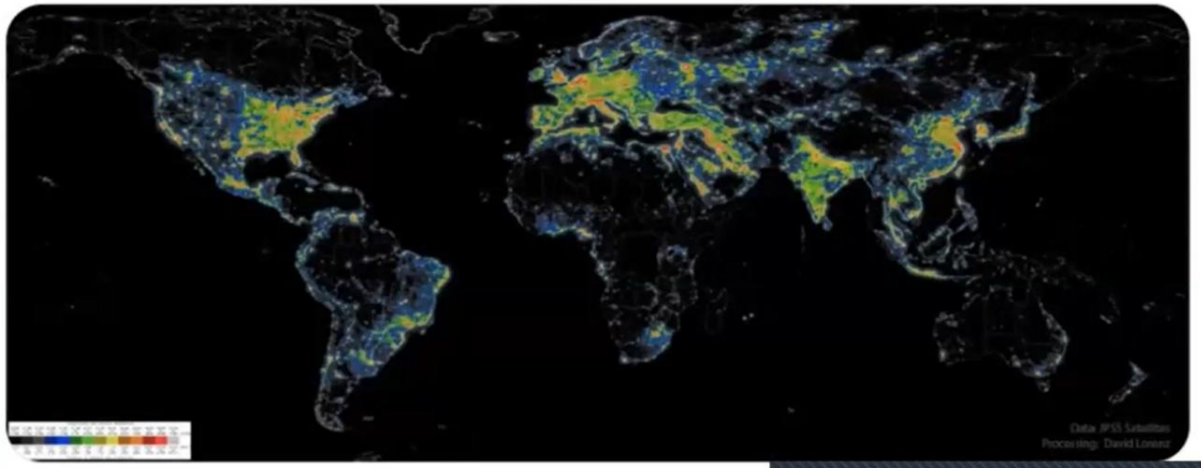
**NextGEOSS** @NextGEOSS · 3月8日

You can never guess what night visions of 🌍🌎🌏 can tell us, can you? A young lady from @WHU_1893 & @UNOSAT will tell you a story about that

📅 8 MARCH

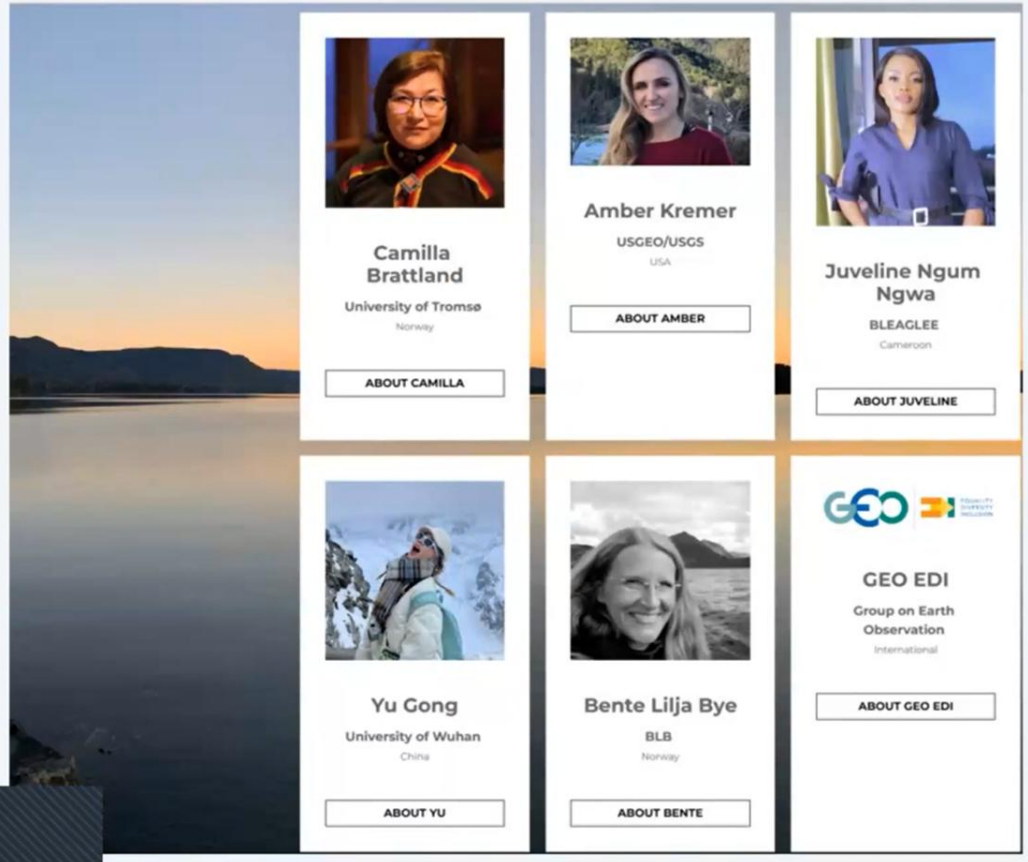
🕐 4 PM CET/3 PM UTC

📝 nextgeoss.eu/nextgeoss-webi... Come celebrate #IWD2023 with several other early career women & #earthobs stories



Group on Earth Observations (GEO) 及 另外 9 个人

https://nextgeoss.eu/nextgeoss-webinar-series-women-mar23



# 6TH ASIA-OCEANIA GROUP ON EARTH OBSERVATIONS (AOGEO) WORKSHOP

## The interns have completed >10 UN reports

14 February 2023

### Light loss assessment following the Marash / Antep Earthquake (6 February 2023, Mw 7.8) using Night-time Light Imagery

Türkiye & Syrian Arab Republic

Status: Significant light loss observed.

Further action(s): full assessment to be conducted

20 April 2023

### Power Supply Recovery Assessment following the Marash / Antep Earthquake (6 February 2023, Mw 7.8) using Night-time Light Imagery

Türkiye & Syrian Arab Republic

Status: Different recovery pattern observed.

Further action(s): full assessment to be conducted

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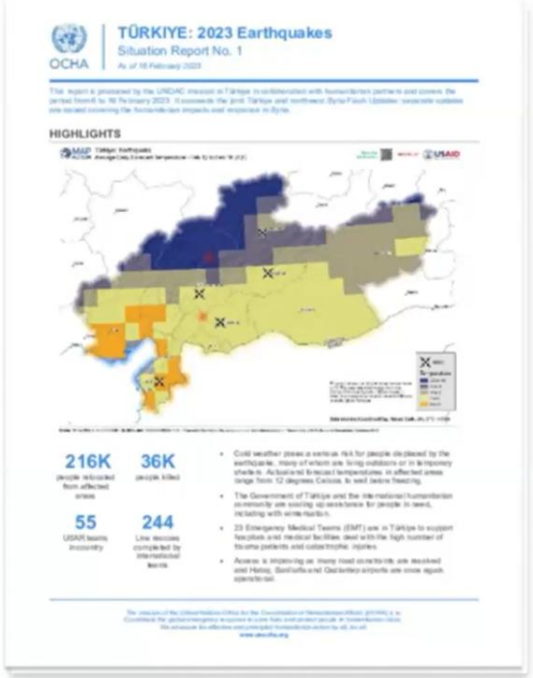
## The products were used and cited by other UN organizations (e.g. UNOCHA and UNHCR) and Disaster Charter

https://data.unhcr.org/en/documents/details/98891

**OPERATIONAL DATA PORTAL**
REFUGEE SITUATIONS

MENU




### Türkiye - OCHA: 2023 Earthquakes Situation Report No. 1, As of 16 February 2023

Document Type: Situation Reports / Updates , Situation Reports

Document Language: English

This report is produced by the UNDAC mission in Türkiye in collaboration with humanitarian partners and covers the period from 6 to 16 February 2023. It succeeds t joint Türkiye and northwest Syria Flash Updates; separate updates are issued covering the humanitarian impacts and response in Syria.

**Partners**

**United Nations Office for the Coordination of Humanitarian Affairs**

Reflecting the destruction of buildings, the departure of people from their homes, and the disruption of basic utilities, a preliminary light-loss assessment issued by the **UN Satellite Centre (UNOSAT) and Wuhan University** on 14 February shows that many urban areas in affected areas became darker after the earthquake, with power outage areas mainly distributed along the plate junction of Kahramanmaras and Hatay, and significant light loss particularly observed in Hatay, Kahramanmaras and Adiyaman. In many sectors of Hatay City, night-time light declined by more than 90 per cent; in Adiyaman, eastern sectors of the city lost more light than western sectors; and downtown Hatay city (areas with higher light density) lost significant light post-earthquake.

## Summary

- Wuhan University has invested great resources on capacity development of GeoInformation Technology
- International Academy on GeoInformation and International GeoInformatics Summer School provide highly internationalized education resources for international students
- UN internship under GEO Night Light has promoted capacity of participating international affairs for Chinese students
- After the lockdown policy of COVID-19, the capacity development is transferred from online to offline, and it will be strengthened with more efforts

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