Ozonesonde observation team in Korea
Kongju National Univ.
Yonsei Univ.

Ozonesonde measurement in Aug 2021 (photo: Hosun Ryu)
Location (Anmyeondo Station, 36.54˚N, 126.33˚E)

- Airport and their Flight control area
- Regular O3 monitoring sites in S. Korea (WOUDC)
- Taehwa Research Forest
  NASA ozonesonde
  (May17-Jun9, 2016)
- Osan Airbase
  ACCLIP mission
  (Jul15-Aug31, 2022)
- Anmyeondo
  (Brewer, column O3)
  Ozonesonde (Aug5-31, 2021)
- Anmyeondo
  (Brewer, weekly)
- Gosan
  (Brewer)
- Pohang
  (O3sonde, weekly)
Location (Anmyeondo Station, 36.54°N, 126.33°E)

Airport and their Flight control area

- Taehwa Research Forest
  NASA ozonesonde
  (May17-Jun9, 2016)
- Osan Airbase
  ACCLIP mission
  (Jul15-Aug31, 2022)
- Anmyeondo (Brewer, column O3)

Anmyeondo GAW station (NIMS, KMA)

Balloon launch site (300m southward)

To get
1. open space
2. ground data more
   (but Antenna is installed at the AMY station)
Location (Anmyeondo Station, 36.54˚N, 126.33˚E)

• Site setup

2. Balloon Launch (backup ground stn.)
Preparation

- Meeting with NASA SHADOZ team

Special thanks to
Drs. Anne Thompson, Ryan Stauffer, Debra Kollonige!

Knowledge support on ozonesonde research, sensor solution and software

Ground station & O3-test set from SHADOZ team
Preparation (Initial and Mid preparation)

- **In-lab preparation**

  Initial preparation: 10-14 days before launch  
  Mid. preparation:  5-7  days before launch  

Mid preparation at the site (Bano lodge)
Preparation (final preparation and launch)

- **Day of flight**

  Daily Schedule (balloon launch at 2:30 pm, local time)

  - Weather briefing (11 AM)
  - Final procedure (1-2:20 PM)
  - Balloon preparation (2 PM)
  - Meta data fill in (2:20 PM)
  - Balloon Launch (2:30 PM)
  - Monitoring (2:30-5:30 PM)
Measurement overview

• Brief summary

Initial success check
25-sonde launches (23 success) at Anmyeondo (AMY)
4-sonde launches (4 successes) at Taehwa research forest (THW)
Measurement overview

• Brief summary *(caution! Preliminary, internal use only)*

Total column O3, comparison to satellite

![Satellite Total Ozone Comparison](image)

- Period of strong STE
- Signal loss at 3km
- Need investigation
Measurement overview

- Brief summary *(caution! Preliminary, internal use only)*

Vertical structure (volume mixing ratio, ppmv)

![Graph](image)

- Shallow STE (double peak)
- Strong STE
- High O3 in mid-trop
- Leftover of STE? (Ja-Ho is looking into detail)
Measurement overview

• Brief summary (caution! Preliminary, internal use only)

Vertical structure (volume mixing ratio, ppmv)

15 August 2021

18 August 2021
Thank you

Contact

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Overview of location

- WOUDC O3 Stations (Brewer)
- Pandora network (could vary…)

Need to add
- Lidar
- Aeronet
- MAXDOAS (NIER)
Korean ACCLIP team (Universities)

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Korean ACCLIP team

1. UTLS processes related to the Asian Summer Monsoon
2. Tropospheric and Stratospheric Ozone chemistry
3. Aerosol, SLCFs and their radiative impact
4. GEMS evaluation and application

Need to organize more…

1. Process and Case study (using Obs, Anal, Model):
   SNU

2. Surface obs (O3sonde, Brewer, lidar):
   Kongju Univ., Yonsei Univ., UNIST, NIMS

3. Modeling (WRF-Chem, trajectory):
   Pusan Univ.

4. GEMS evaluation (O3, O3prof, NO2, HCHO, etc):
   Yonsei Univ., NIER-GEMS