Large-scale transport
ODE case selection work

IASOA Trace Gas WG meeting

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ODE statistical works

- **Data:** ozonesondes
- **Sites:** Eureka, Alert, Resolute Bay
- **Period:** 2007-2016
ODE statistics

ACE/OSIRIS satellite validation campaign:

- Intensive phase: Feb 25 to Mar 14
- Extended phase: Mar 15 to Apr 1
- ODE: ozone VMR < 10 ppbv from surface to 500 m
Transport cases

1–5 Mar. 2007
(Zhao et al., ACP 2017)

19–20 Apr. 2008
(Neuman et al., ACP 2010; Choi et al., 2012)

28 Mar. – 5 Apr. 2011
(Zhao et al., JGR 2016, 2017; Blechschmidt et al., ACP 2016)

24-31 Mar. 2007
(Begoin et al. 2010)

26 Apr. – 5 May 2008
(Choi et al. unpublished)
FLEXPART (case 1 &2)

• Figure 7 in Zhao et al. 2017:

• SSA-TRACER 6-day backward run total column sensitivity for release from pTOMCAT grid

• release times and heights as follows: (a) 17:00-18:00 UTC 3 March 2007, 0-0.5 km, (b) 17:00-18:00 UTC 3 March 2007, 1.5-2.0 km, (c) 14:00-15:00 UTC 3 April 2011, 0-0.5 km, and (d) 14:00-15:00 UTC 3 April 2011, 1.5-2.0 km.
ERA-Interim

• Figure 9 in Zhao et al. 2017:

• 10-metre wind gust and boundary layer heights (BLH)

• (a) wind gust on 28 February 2007 00:00 UTC, (b) wind gust on 1 April 2011 00:00 UTC, (c) boundary layer height at the same time as (a), and (d) boundary layer height at the same time as (b).
Evolve of the ODE
Case 3: one BrO plume that sweeps across Eureka, Alert and Ny-Ålesund stations
Case 4: Another BrO plume that could sweep across Barrow, Eureka and Alert stations
Suggested large-scale transport cases:


Need:

1. 1-hrly ozone data from all 7 stations (Tiksi, Pallas, Ny-Alesund, Barrow, Eureka, Alert and Summit) from above periods
2. ozonesonde data if required
3. BrO measurements if required

https://www.esrl.noaa.gov/psd/iasoa/observatories
Thank You