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*Supplement of*

## **Identification of jet lubrication oil as a major component of aircraft exhaust nanoparticles**

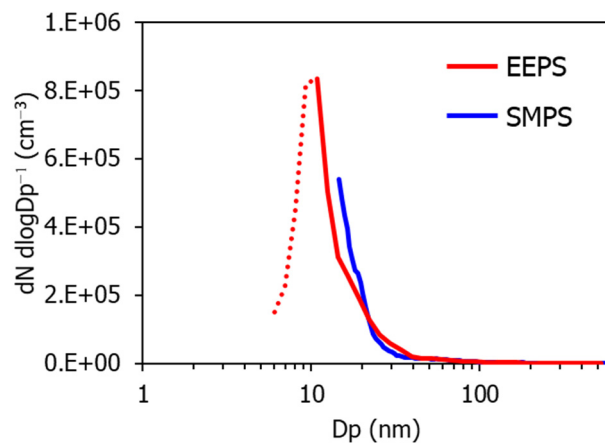
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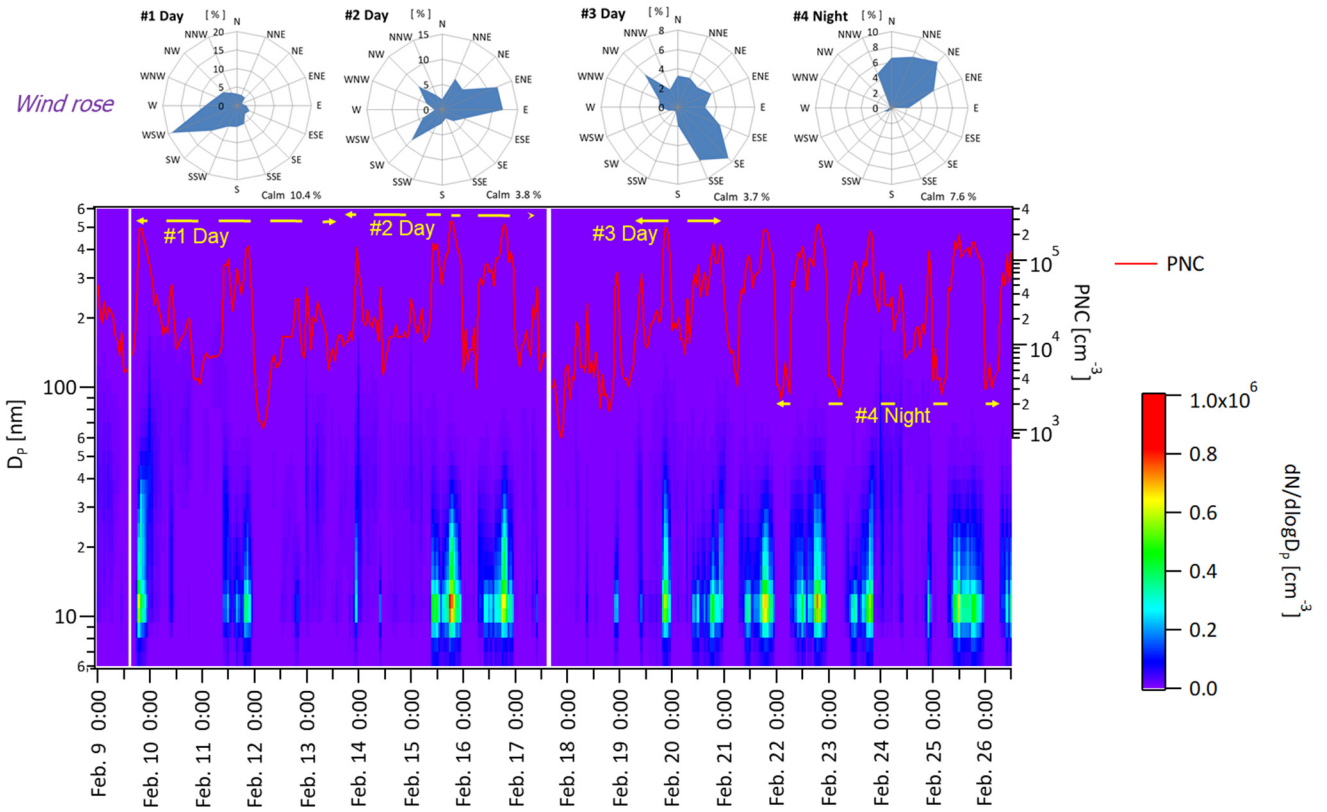
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**Table S1.** Summary of aircraft models used in runway A of Narita International Airport, Japan in February 5–26, 2018.

Rank	Number of flights	Model
1	1,159	A320
2	1,094	B763
3	741	B738
4	739	B788
5	711	B77W
6	707	B789
7	559	A333
8	478	B772
9	390	A321
10	243	B748
11	211	B77L
12	172	B744
13	122	A20N
14	122	A388
15	115	A332
16	96	A359
17	90	DH8D
18	79	B773
19	67	A343
20	50	B739
21	43	B735
22	35	MD11
23	25	B752
24	22	A306
25	14	CRJ7
25	14	GLF5
27–39	51	Others (17 models)
Total	8,149	

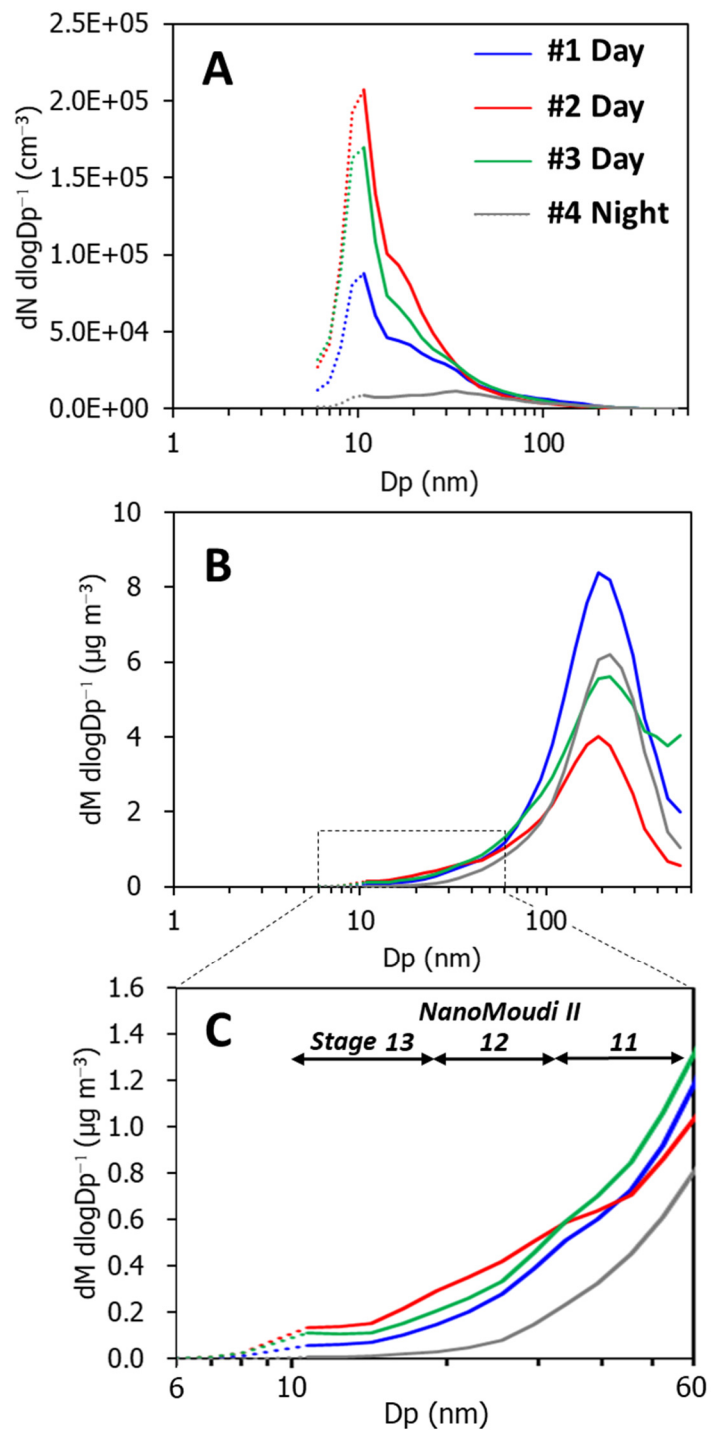


**Figure S1.** Size distributions of particle number concentrations measured using EEPS and SMPS. Data averaged over 1 h between 11:00–12:00 on February 15, 2018 are shown.



**Figure S2.** One-month time series of total particle number concentrations (PNCs) and size distribution of particles measured using the EEPS during February 9–26, 2018. One-hour averaged data are shown. The sampling periods and their wind roses at the measurement site are also shown. The averages and the ranges (minimum–maximum) of the wind speeds during the sampling periods were 2.2 (0–9.2)  $\text{m s}^{-1}$  (#1 Daytime), 2.9 (0–7.2)  $\text{m s}^{-1}$  (#2 Daytime), 2.4 (0–6.9)  $\text{m s}^{-1}$  (#3 Daytime), and 2.9 (0–6.1)  $\text{m s}^{-1}$  (#4 Nighttime). Runway A is in a northerly or easterly direction from our measurement site.

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**Figure S3.** Size distributions of particle number concentrations measured using the EEPS averaged during the sampling periods (A). (B, C) Estimated size distributions of particle mass concentrations.