

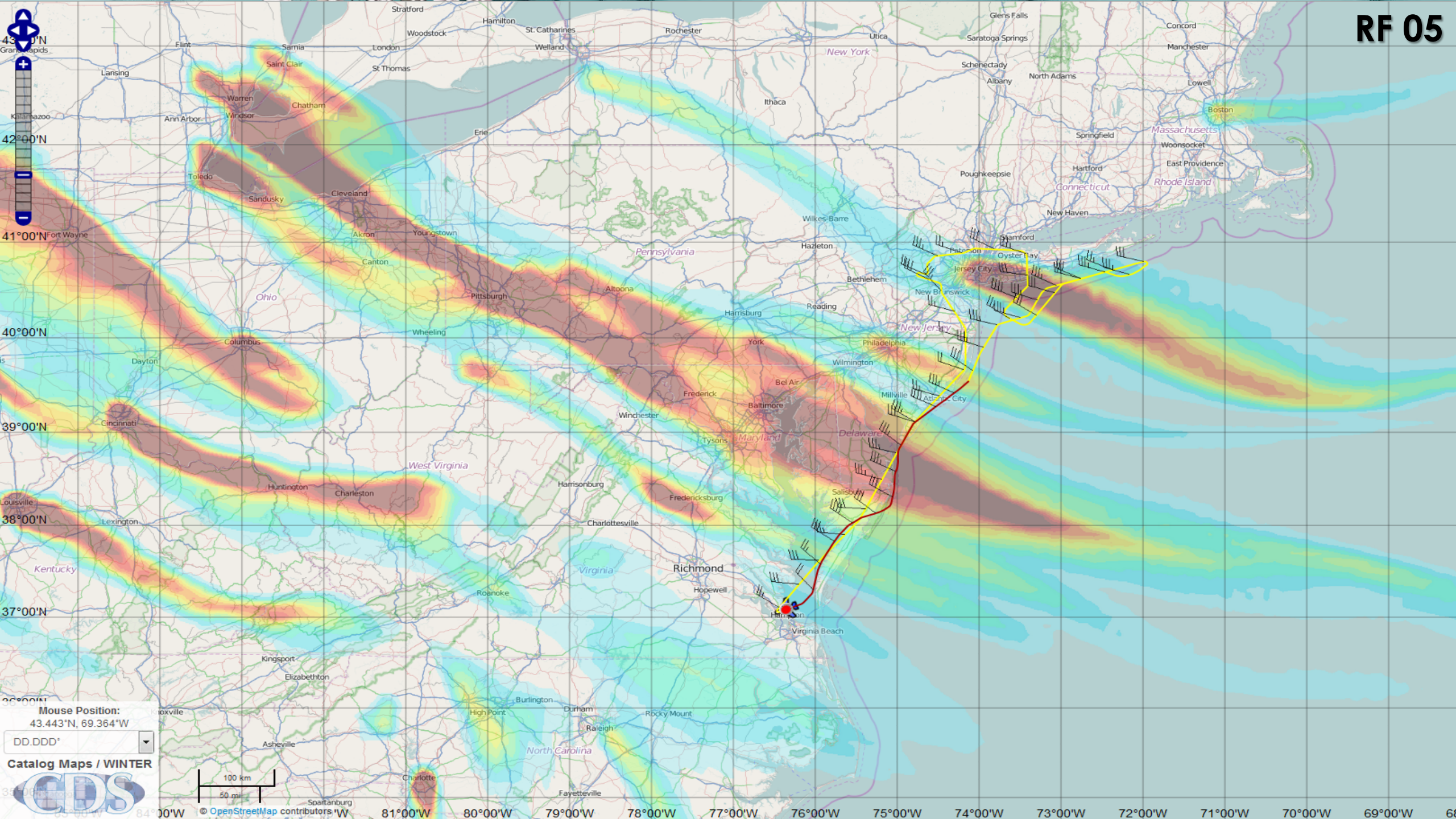


An Overview of SO_2 and NH_3 Measurements over the Eastern United States

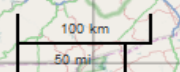
Jaime R. Green

Discussion

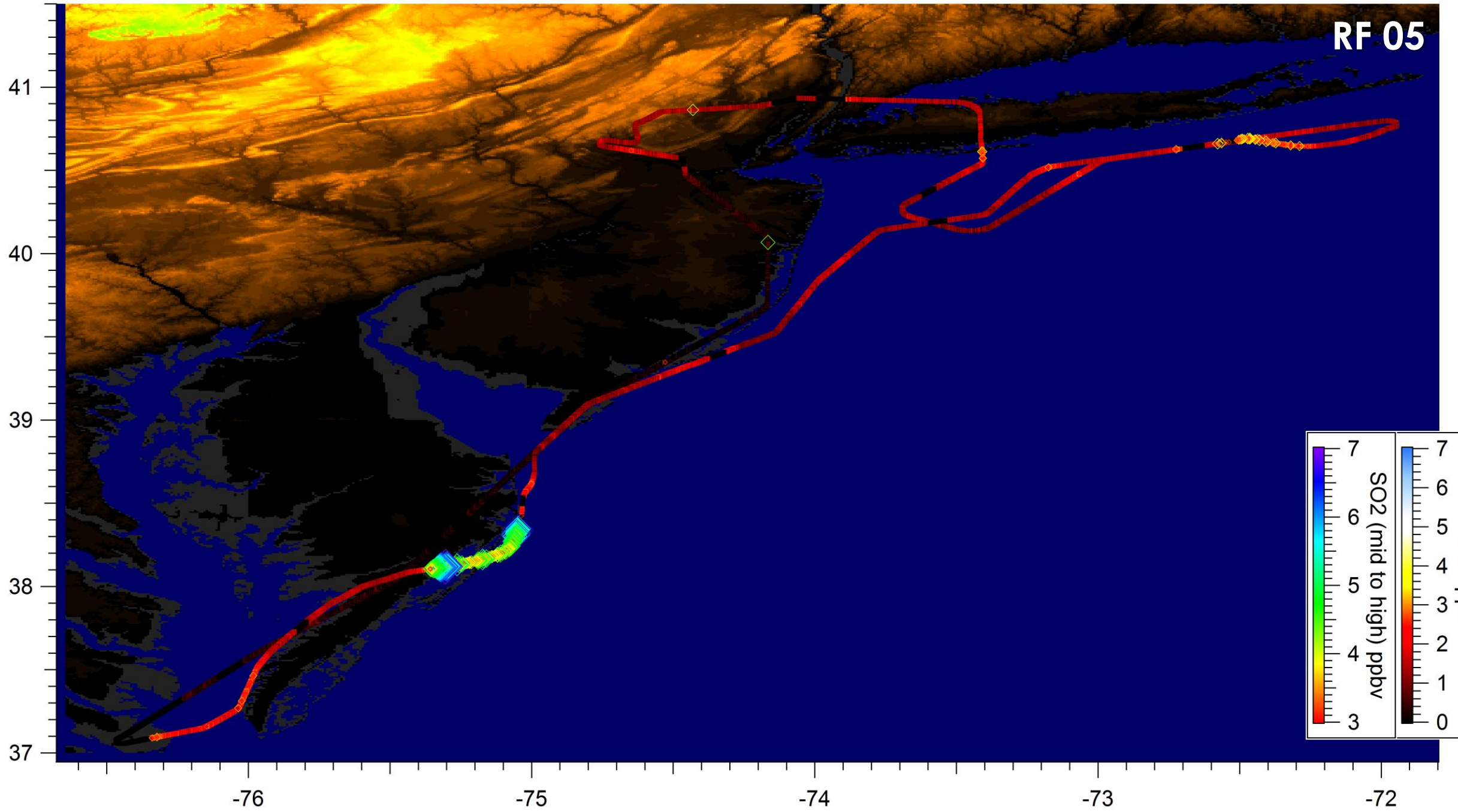
- ▶ Selected SO₂ Measurements and Environmental Conditions
- ▶ Selected NH₃ Measurements and Environmental Conditions



Mouse Position:
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 DD.DDD°
 Catalog Maps / WINTER

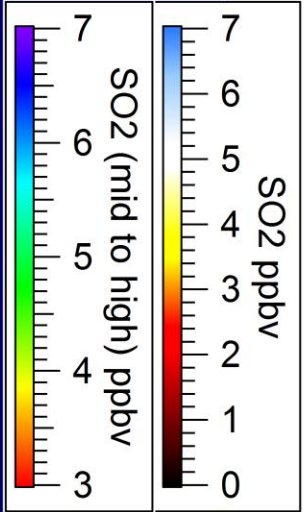


RF 05

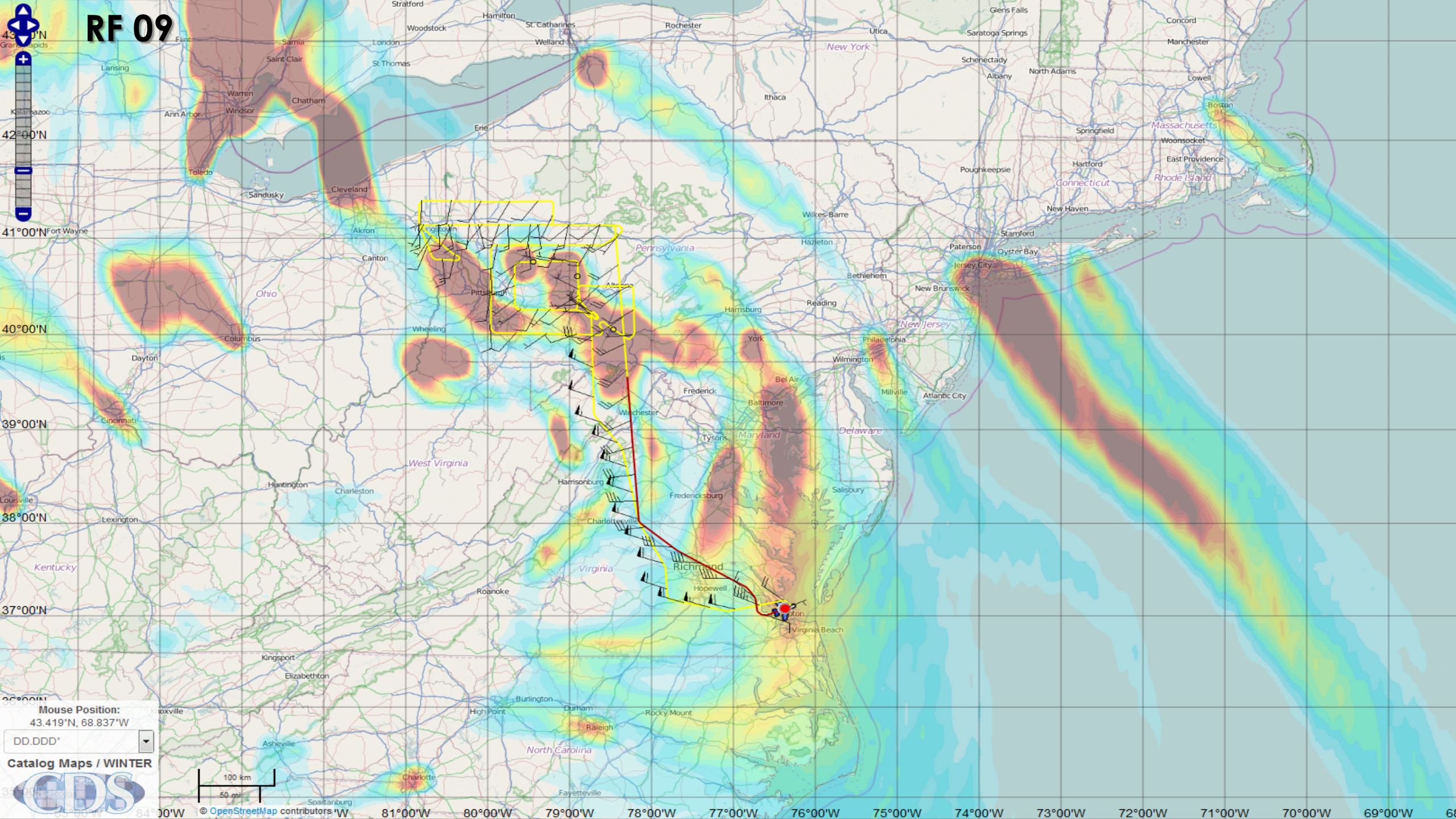


41
40
39
38
37

-76 -75 -74 -73 -72



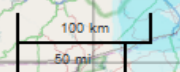
RF 09



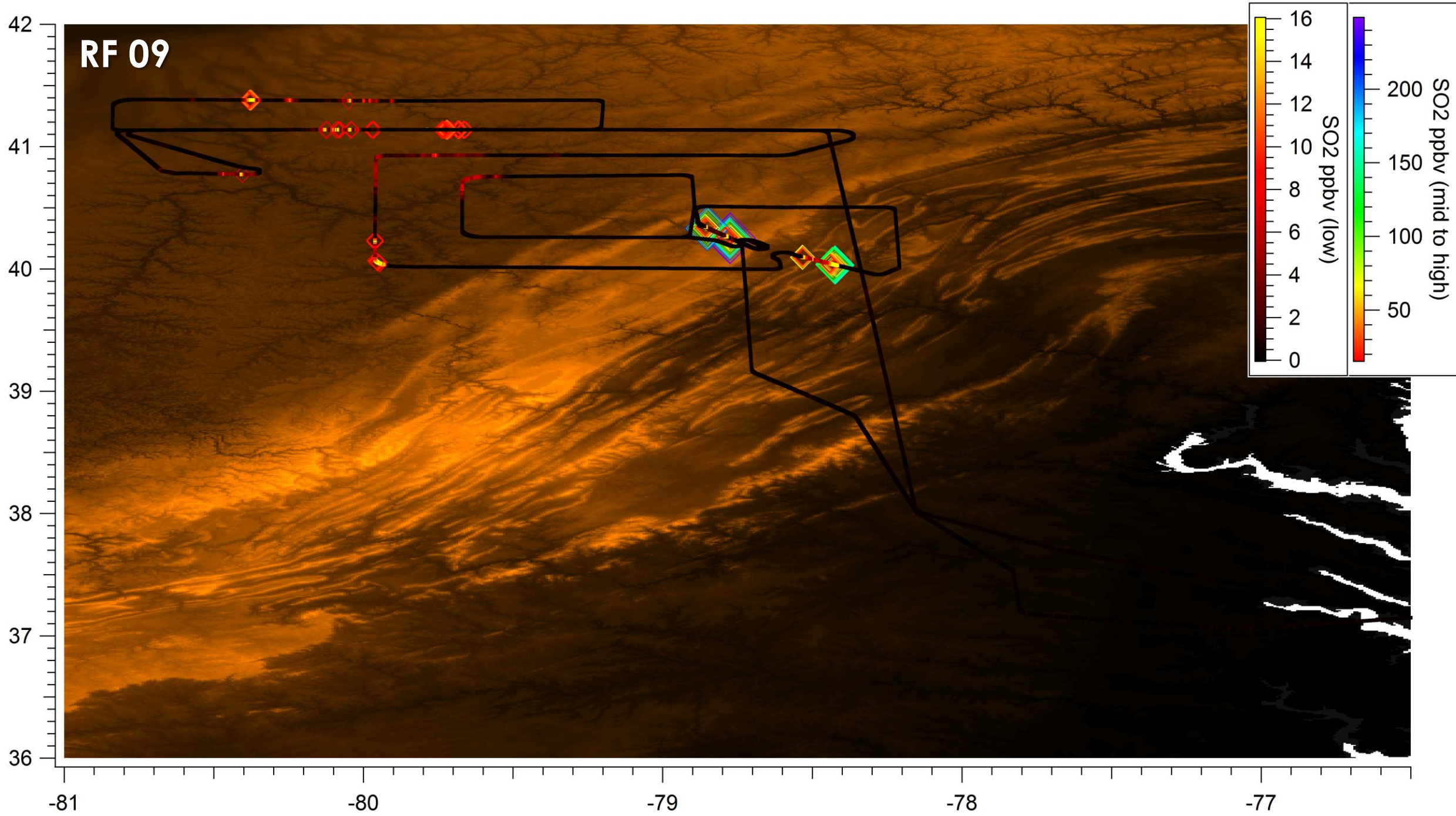
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39°00'N
38°00'N
37°00'N
36°00'N

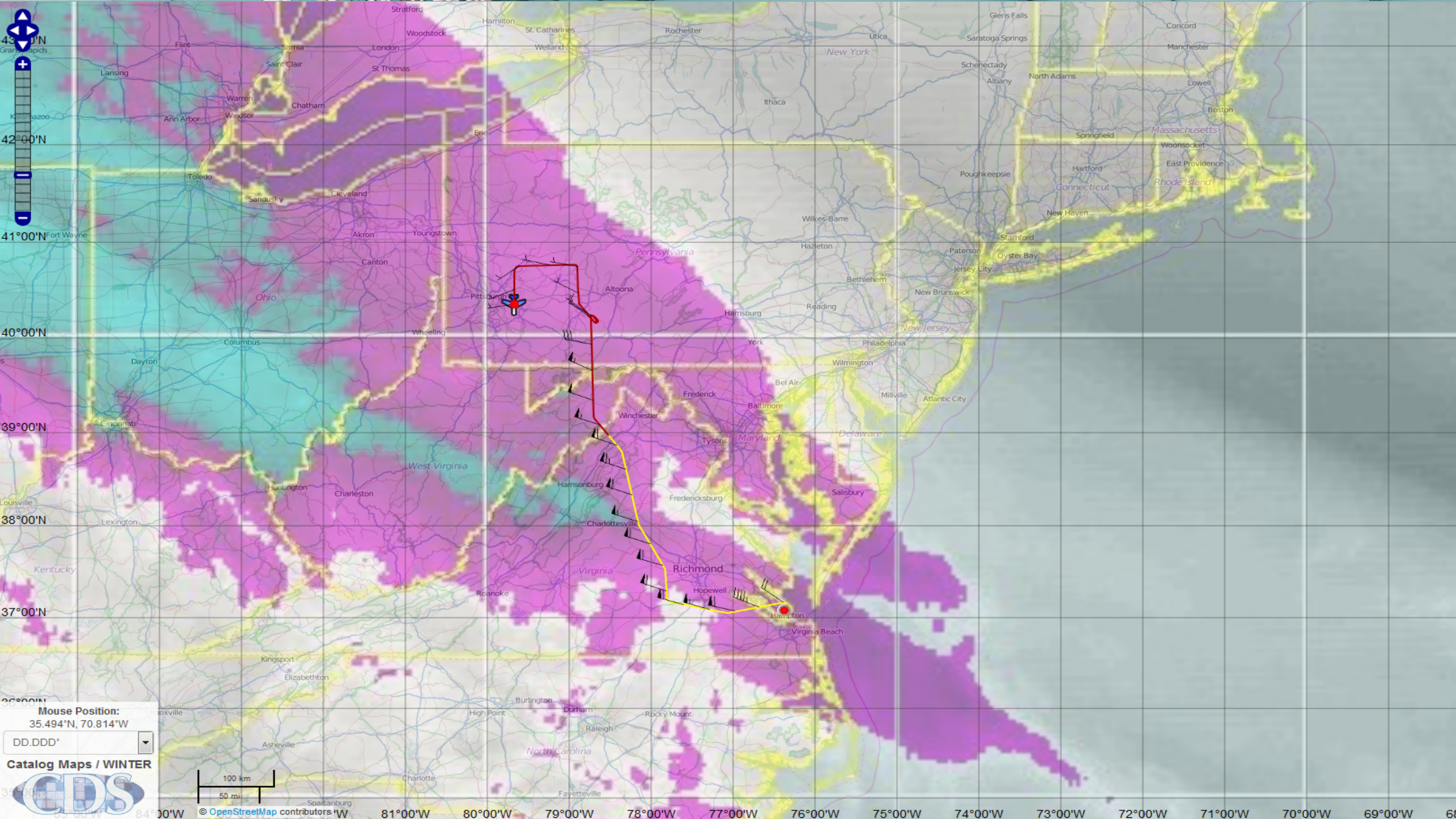
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DD.DDD°

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CDS
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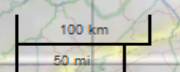
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43°00'N
42°00'N
41°00'N
40°00'N
39°00'N
38°00'N
37°00'N
36°00'N

Mouse Position:
35.494°N, 70.814°W



84°00'W 81°00'W 80°00'W 79°00'W 78°00'W 77°00'W 76°00'W 75°00'W 74°00'W 73°00'W 72°00'W 71°00'W 70°00'W 69°00'W

43°00'N
Gran Rapids

42°00'N

41°00'N Fort Wayne

40°00'N

39°00'N

38°00'N

37°00'N

36°00'N

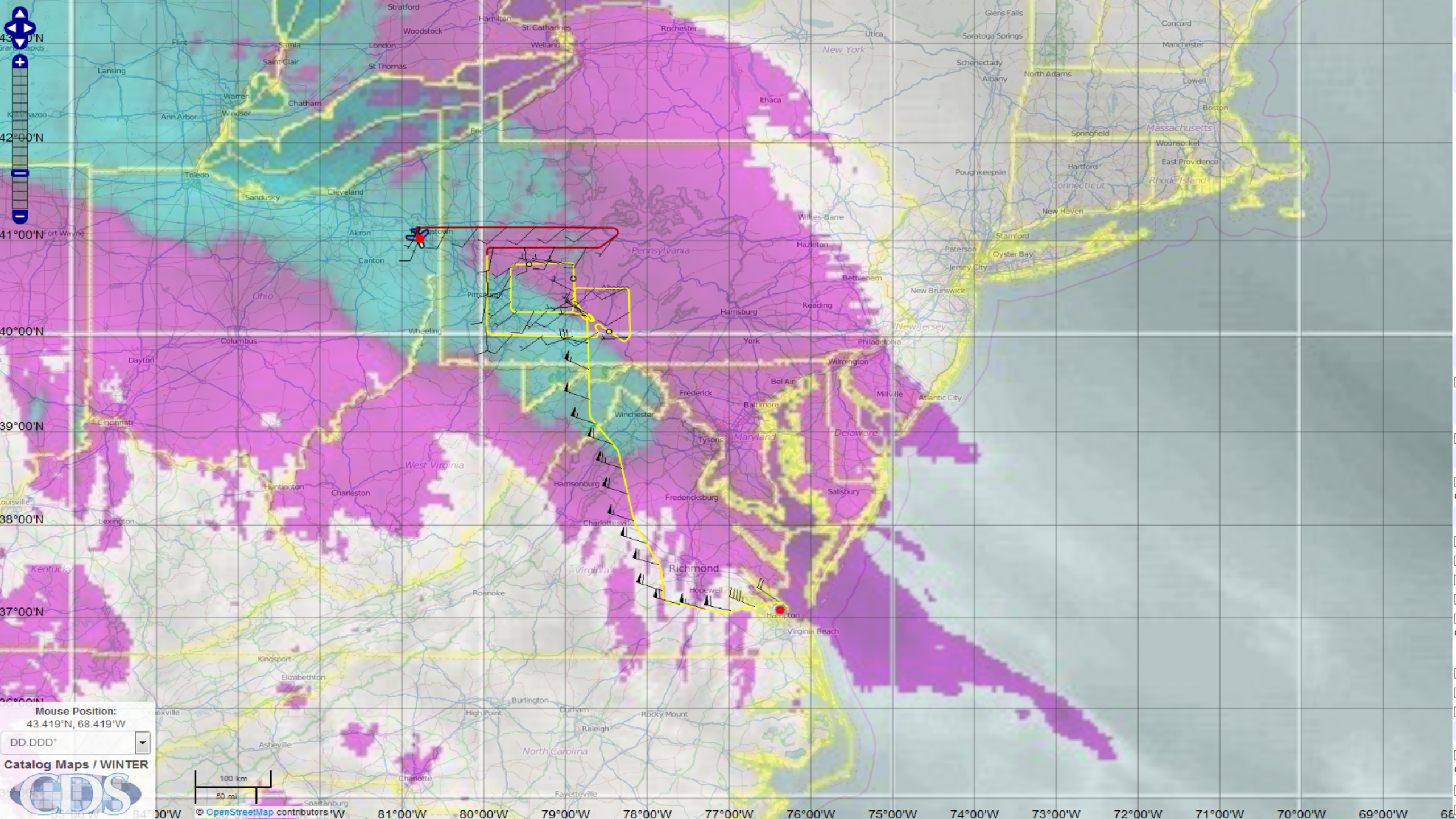
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DD.DDD°

Catalog Maps / WINTER



© OpenStreetMap contributors W 84°00'W 81°00'W 80°00'W 79°00'W 78°00'W 77°00'W 76°00'W 75°00'W 74°00'W 73°00'W 72°00'W 71°00'W 70°00'W 69°00'W



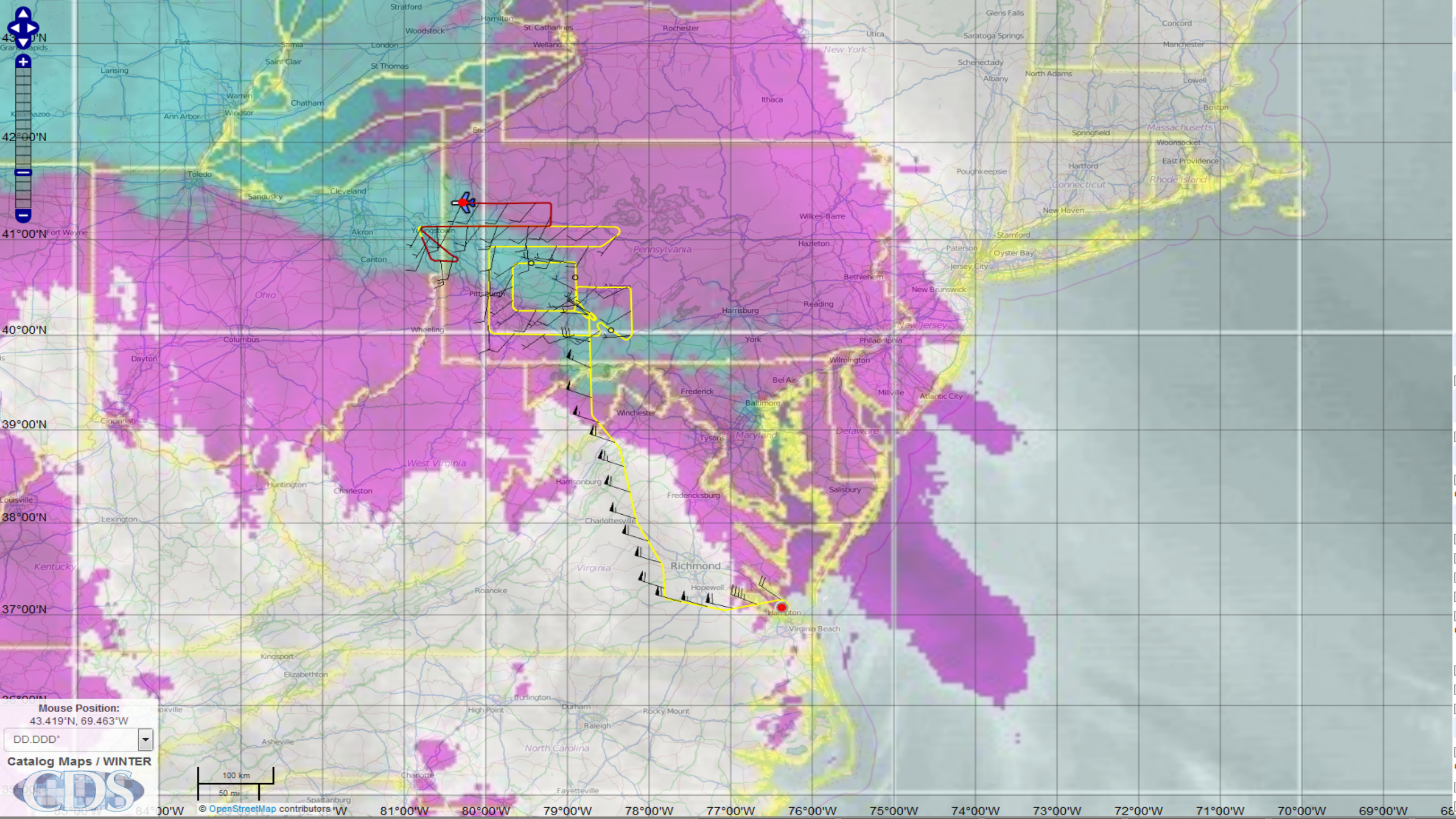
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38°00'N
37°00'N
36°00'N

Mouse Position:
43.419°N, 68.419°W
DD.DDD°

Catalog Maps / WINTER
CDS
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84°00'W 81°00'W 80°00'W 79°00'W 78°00'W 77°00'W 76°00'W 75°00'W 74°00'W 73°00'W 72°00'W 71°00'W 70°00'W 69°00'W



43°00'N
Grand Rapids

42°00'N

41°00'N
Fort Wayne

40°00'N

39°00'N

38°00'N

37°00'N

36°00'N

Mouse Position:
43.419°N, 69.463°W

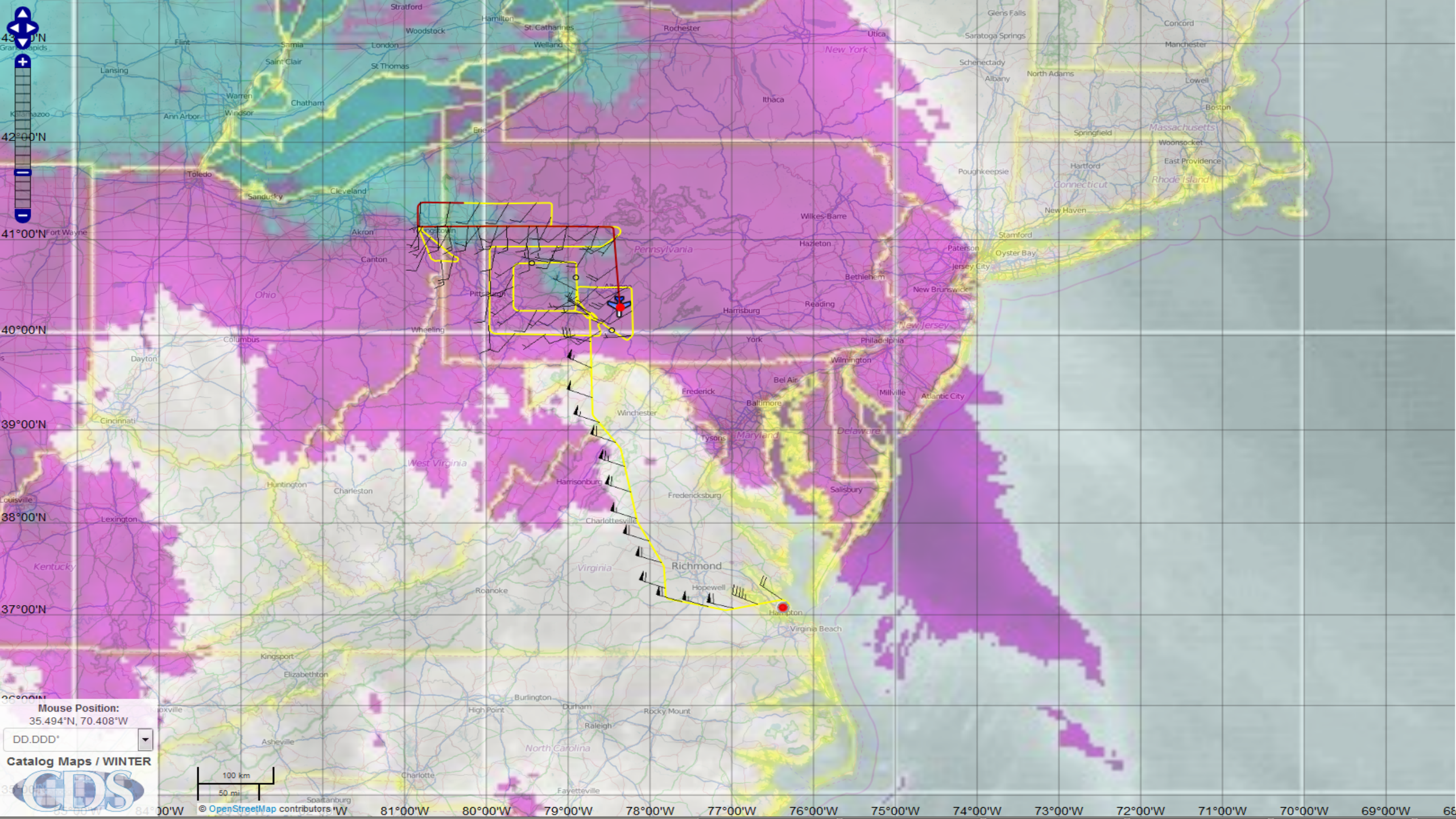
DD.DDD°

Catalog Maps / WINTER

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43°00'N
Grand Rapids

42°00'N

41°00'N Fort Wayne

40°00'N

39°00'N

38°00'N

37°00'N

36°00'N

35°00'N

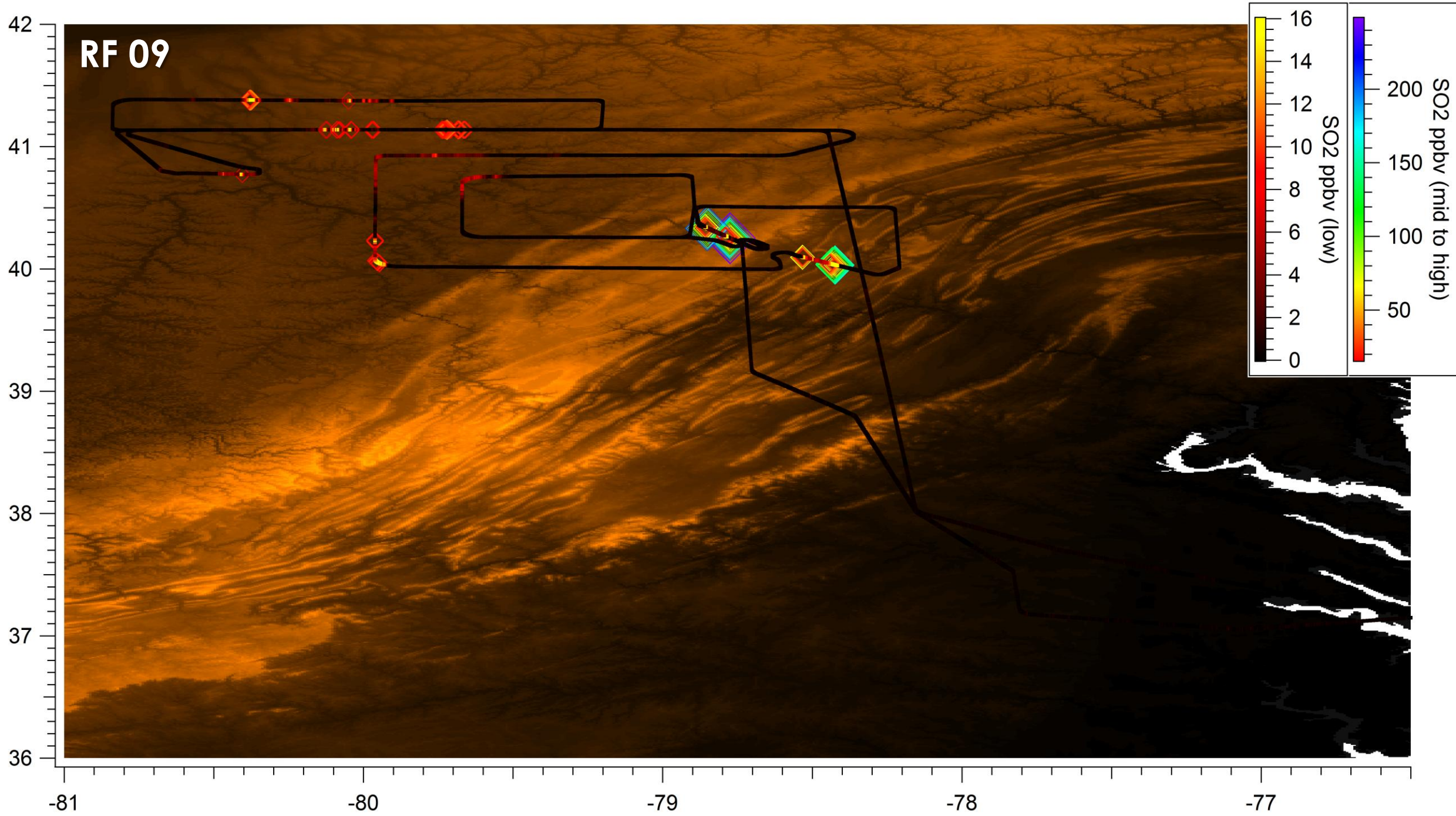
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DD.DDD°

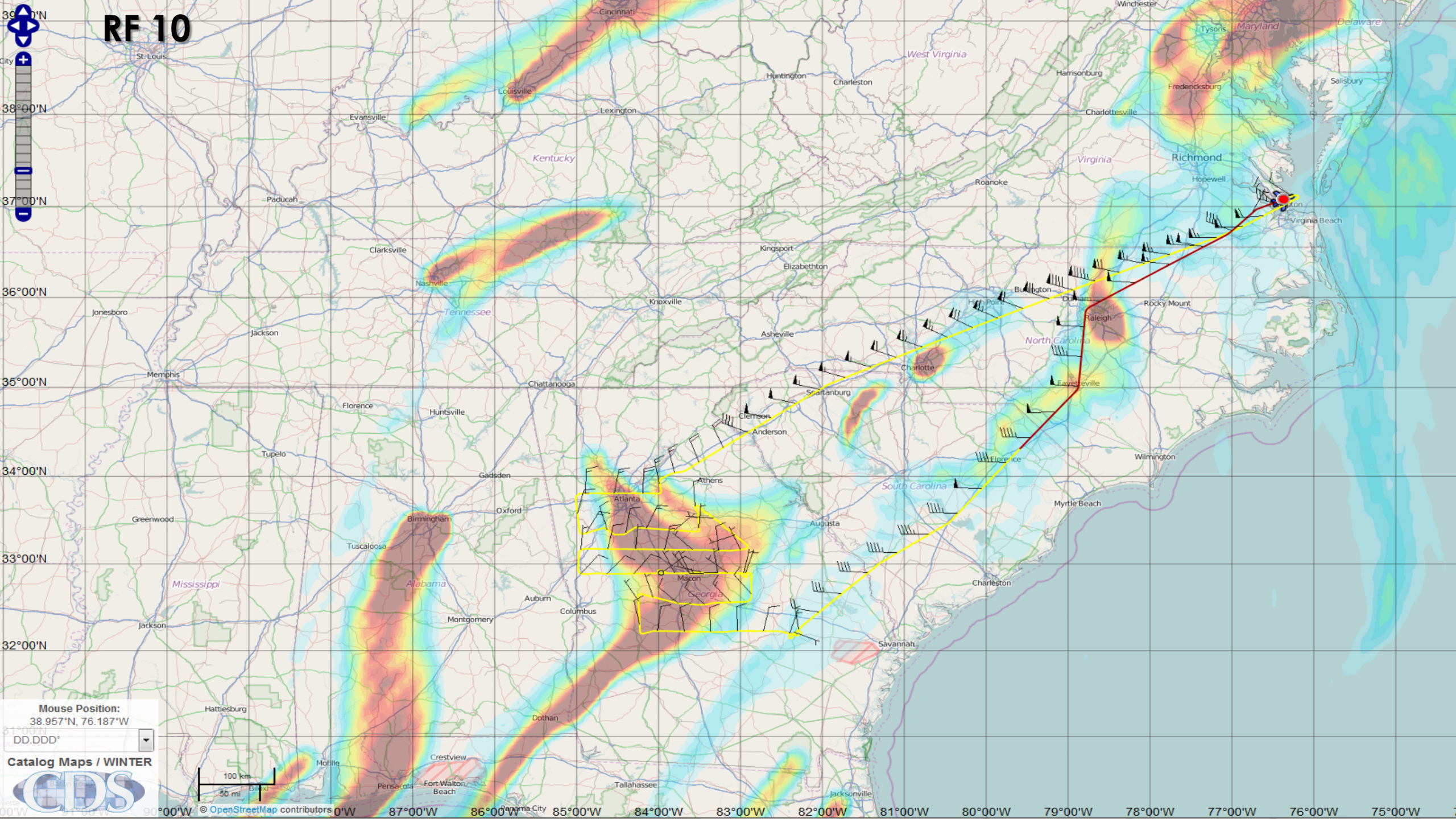
Catalog Maps / WINTER



© OpenStreetMap contributors W 84°00'W 81°00'W 80°00'W 79°00'W 78°00'W 77°00'W 76°00'W 75°00'W 74°00'W 73°00'W 72°00'W 71°00'W 70°00'W 69°00'W 68°00'W



RF 10

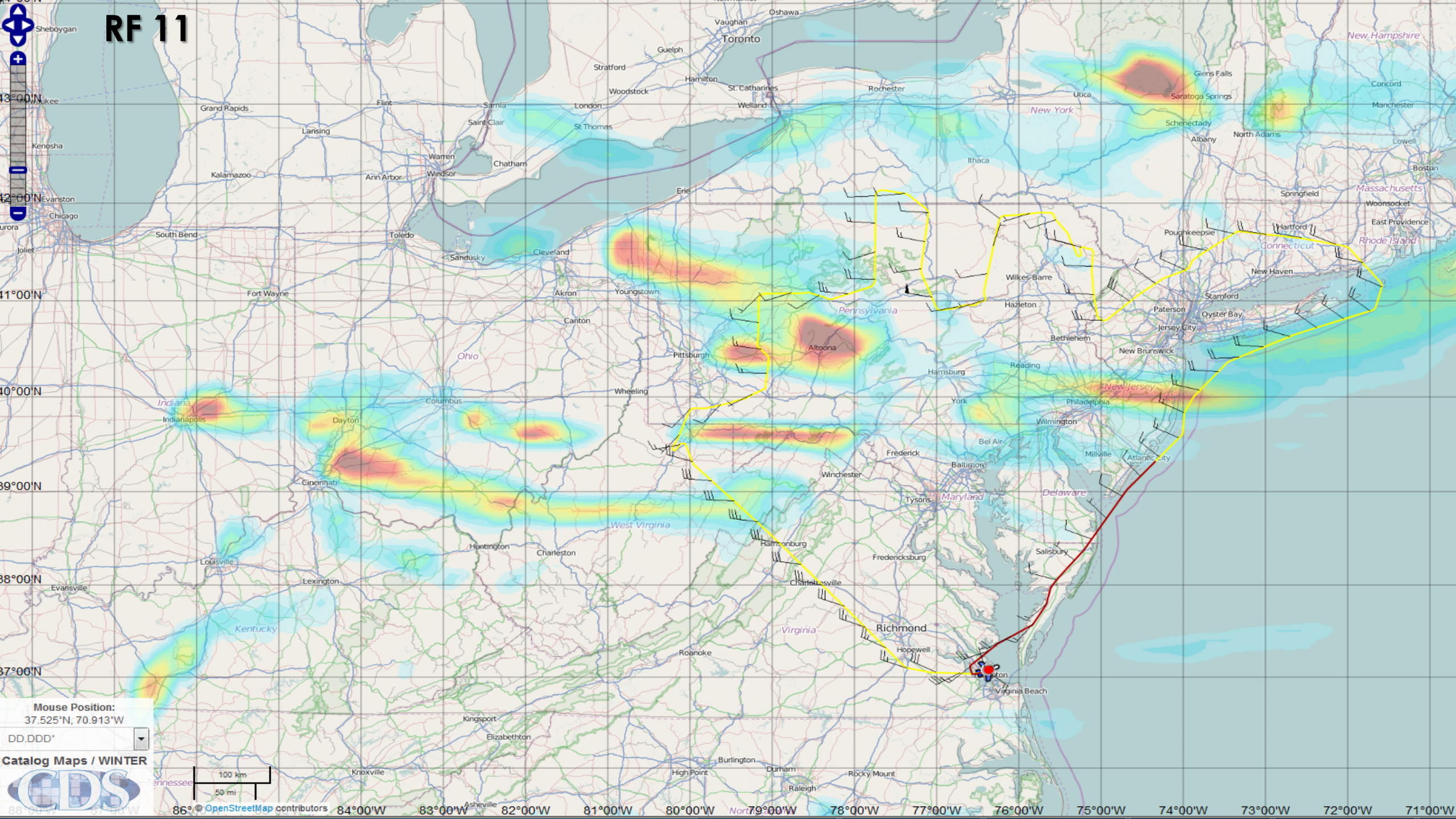


Mouse Position:
38.957°N, 76.187°W
DD.DDD°



100 km
50 mi

© OpenStreetMap contributors 0°W 87°00'W 86°00'W 85°00'W 84°00'W 83°00'W 82°00'W 81°00'W 80°00'W 79°00'W 78°00'W 77°00'W 76°00'W 75°00'W

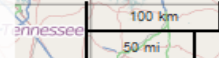


RF 11

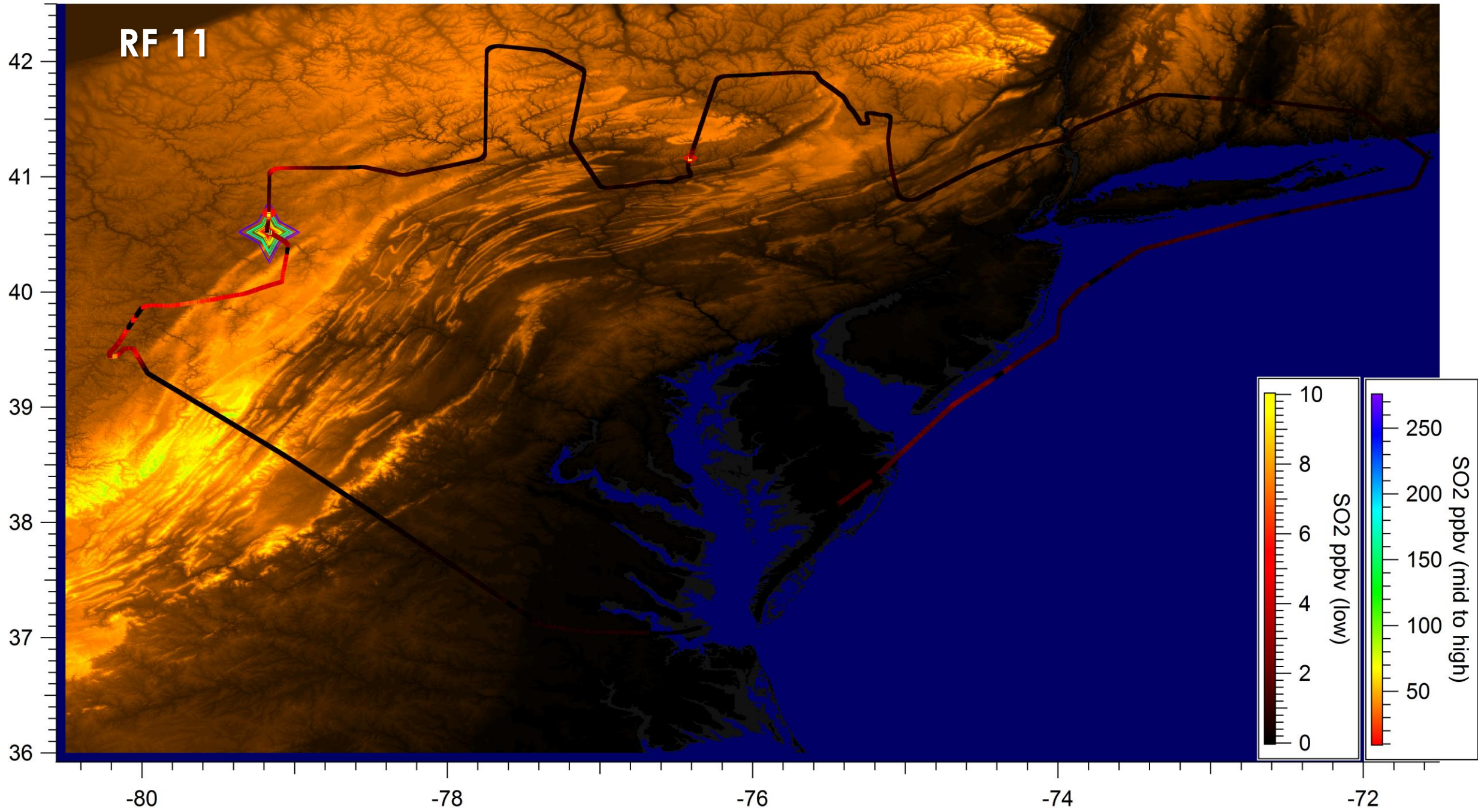
Sheboygan
 13°00'N
 12°00'N
 11°00'N
 10°00'N
 9°00'N
 8°00'N
 7°00'N

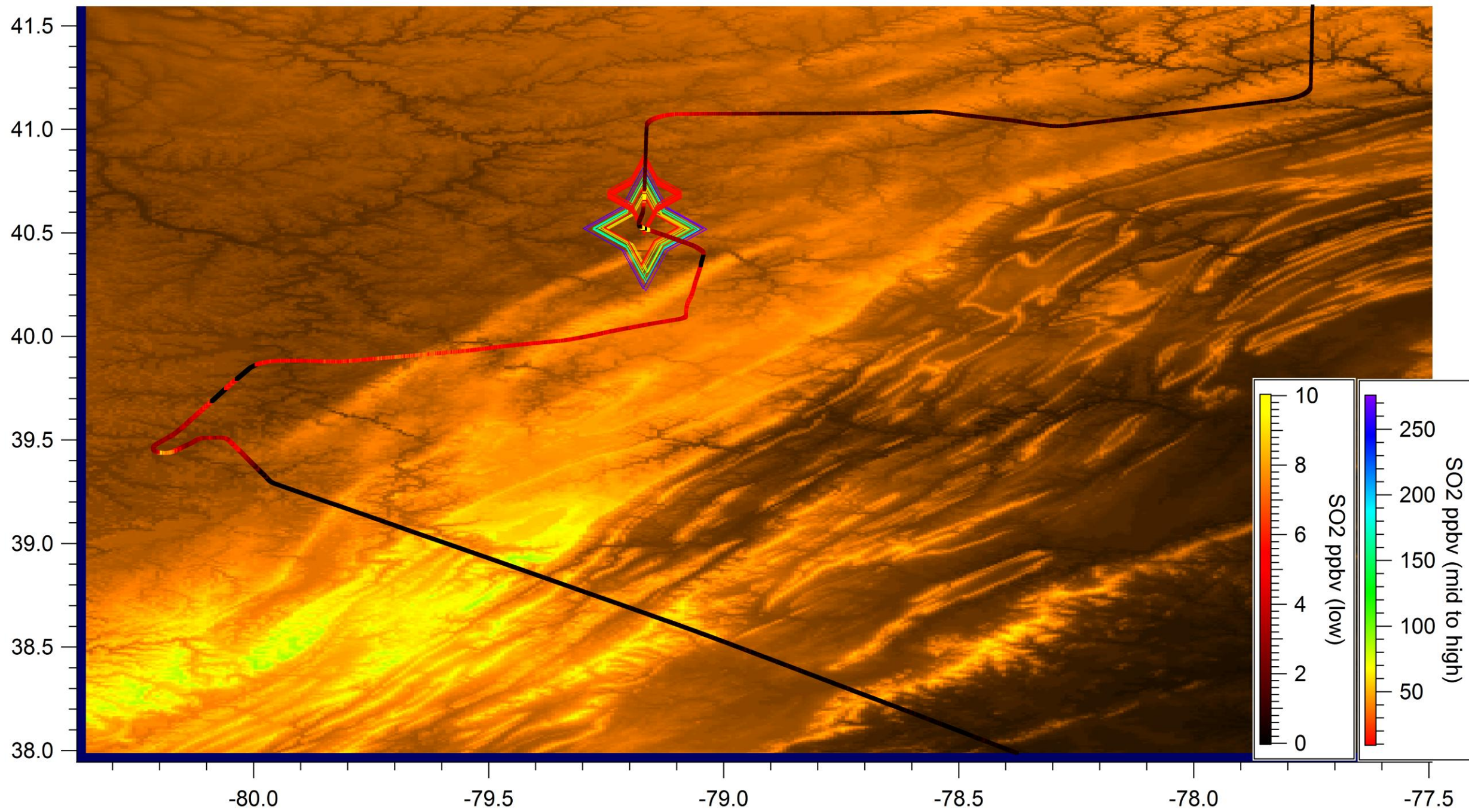
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 DD.DDD°

Catalog Maps / WINTER

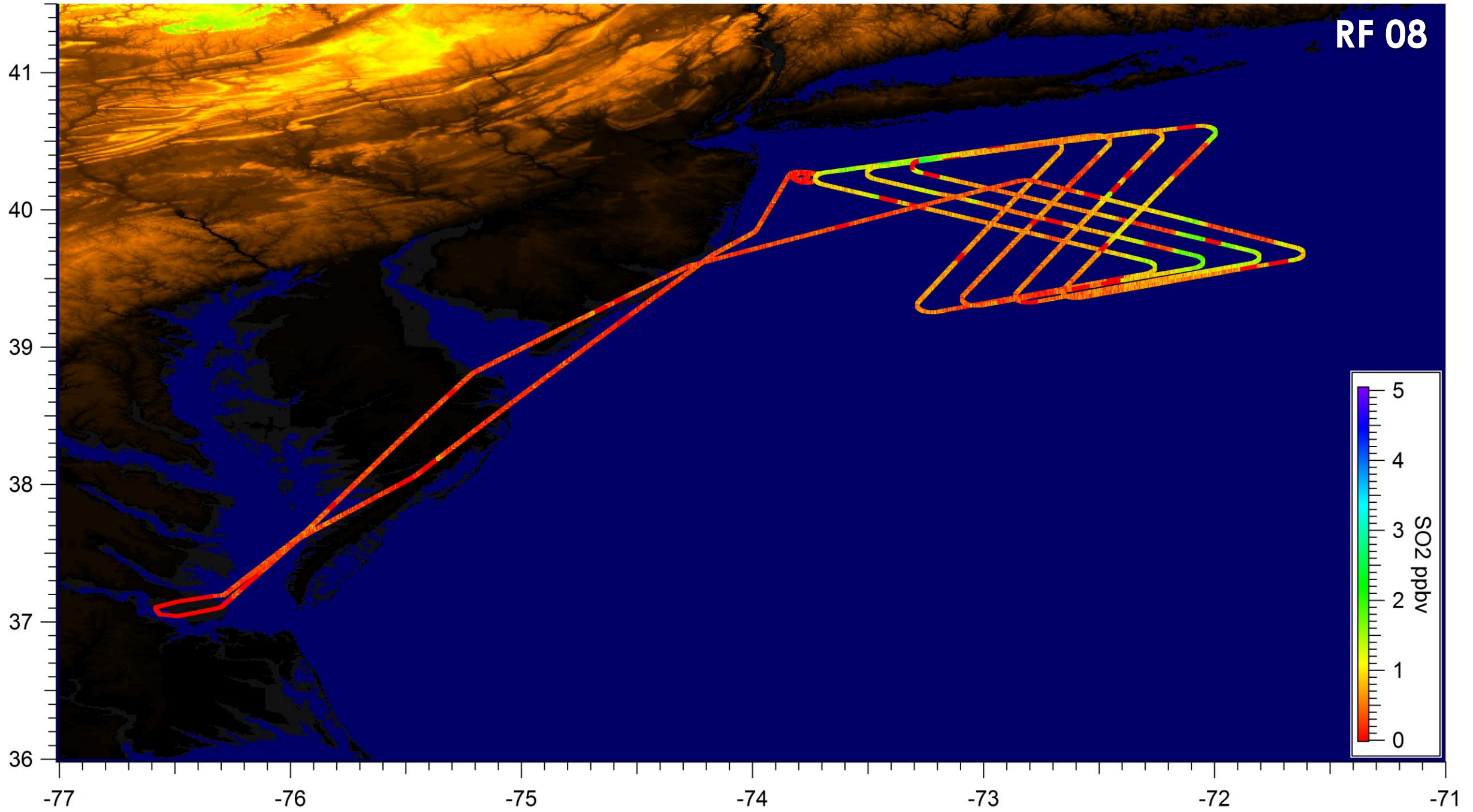


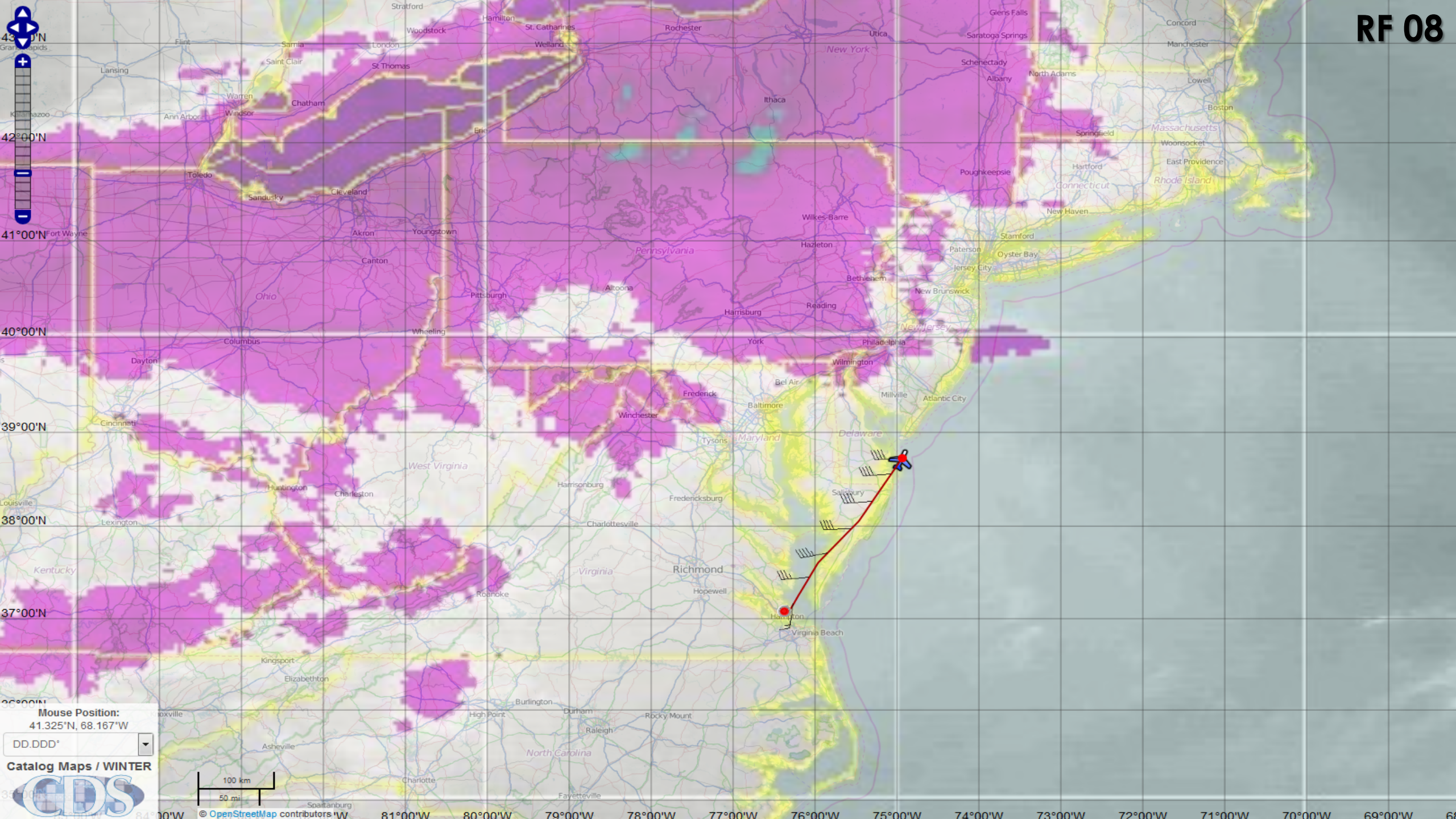
86° © OpenStreetMap contributors 84°00'W 83°00'W 82°00'W 81°00'W 80°00'W 79°00'W 78°00'W 77°00'W 76°00'W 75°00'W 74°00'W 73°00'W 72°00'W 71°00'W





RF 08





43°00'N
Grand Rapids

42°00'N
Kalamazoo

41°00'N
Fort Wayne

40°00'N

39°00'N

38°00'N

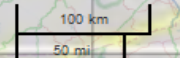
37°00'N

36°00'N

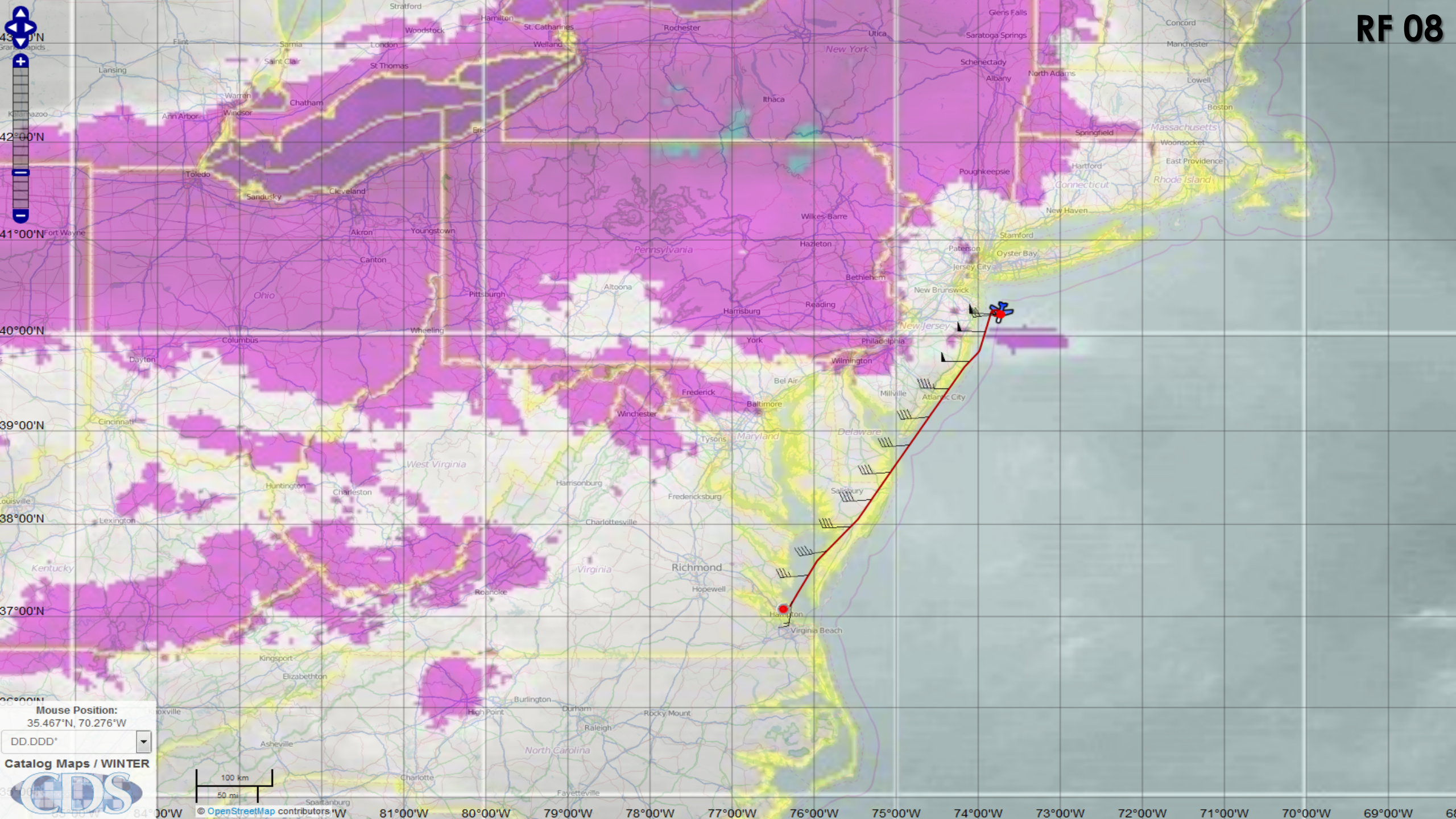
Mouse Position:
41.325°N, 68.167°W

DD.DDD°

Catalog Maps / WINTER



84°00'W © OpenStreetMap contributors 81°00'W 80°00'W 79°00'W 78°00'W 77°00'W 76°00'W 75°00'W 74°00'W 73°00'W 72°00'W 71°00'W 70°00'W 69°00'W



43° 00' N
Grand Rapids

42° 00' N

41° 00' N Fort Wayne

40° 00' N

39° 00' N

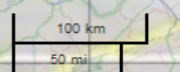
38° 00' N

37° 00' N

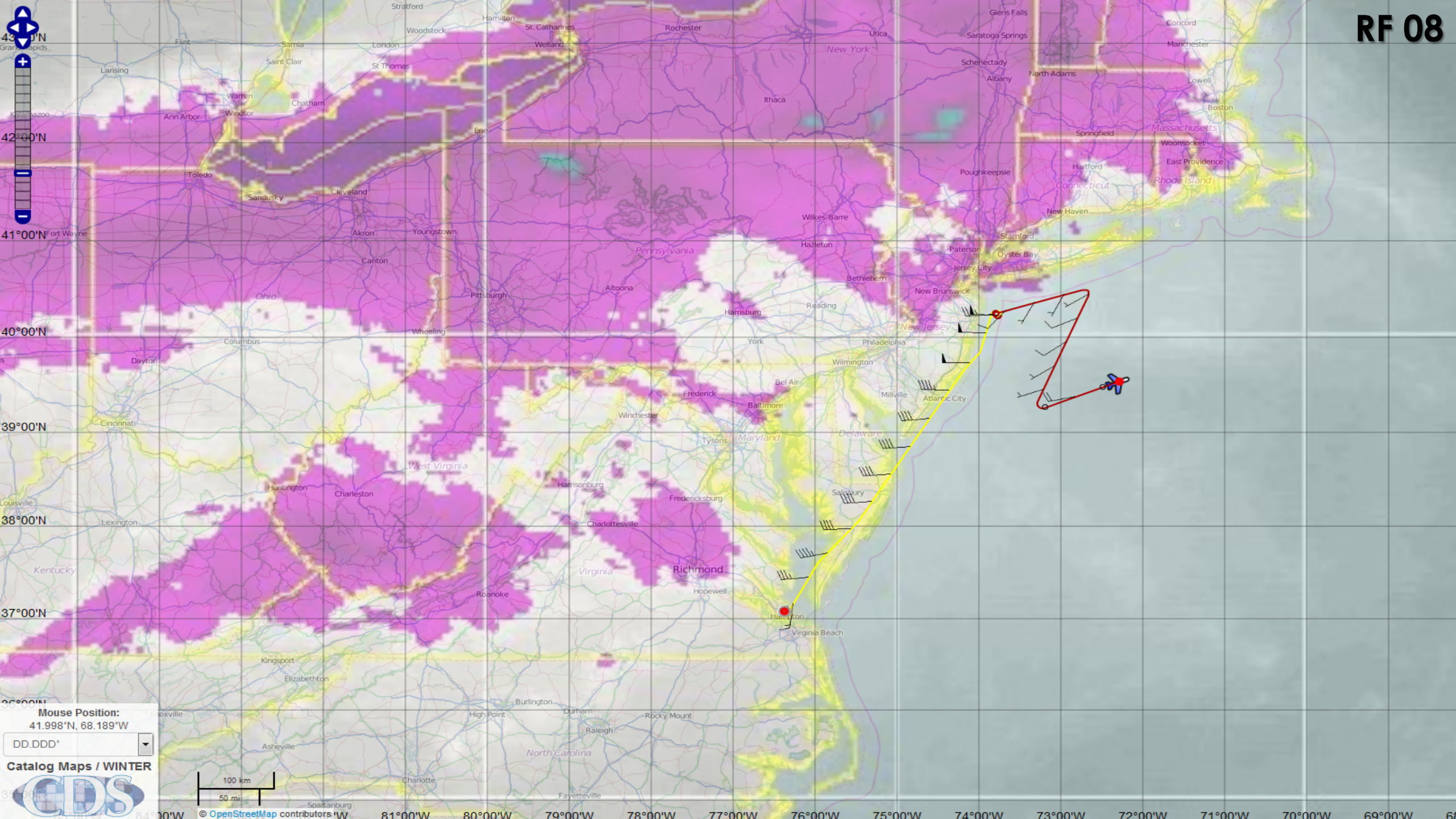
36° 00' N

Mouse Position:
35.467°N, 70.276°W

DD.DDD°



© OpenStreetMap contributors W 84° 00' W 81° 00' W 80° 00' W 79° 00' W 78° 00' W 77° 00' W 76° 00' W 75° 00' W 74° 00' W 73° 00' W 72° 00' W 71° 00' W 70° 00' W 69° 00' W



43°00'N
Grand Rapids

42°00'N

41°00'N
Fort Wayne

40°00'N

39°00'N

38°00'N

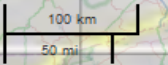
37°00'N

36°00'N

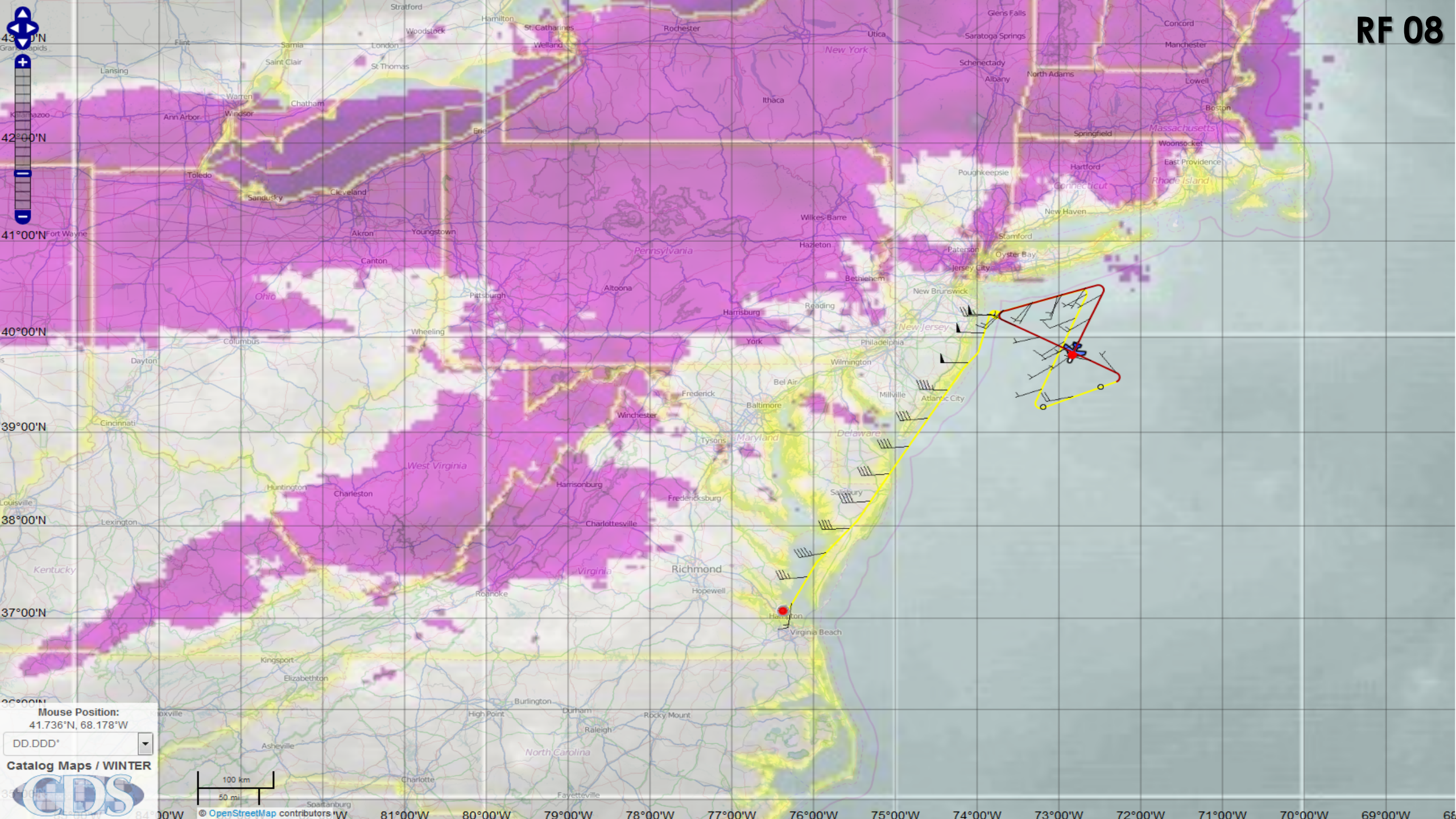
Mouse Position:
41.998°N, 68.189°W

DD.DDD°

Catalog Maps / WINTER



84°00'W © OpenStreetMap contributors 81°00'W 80°00'W 79°00'W 78°00'W 77°00'W 76°00'W 75°00'W 74°00'W 73°00'W 72°00'W 71°00'W 70°00'W 69°00'W



43°00'N
Gran Rapids

42°00'N

41°00'N Fort Wayne

40°00'N

39°00'N

38°00'N

37°00'N

36°00'N

35°00'N

34°00'N

33°00'N

32°00'N

31°00'N

30°00'N

29°00'N

28°00'N

27°00'N

26°00'N

25°00'N

24°00'N

23°00'N

22°00'N

21°00'N

20°00'N

19°00'N

18°00'N

17°00'N

16°00'N

15°00'N

14°00'N

13°00'N

12°00'N

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7°00'N

6°00'N

5°00'N

4°00'N

3°00'N

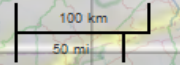
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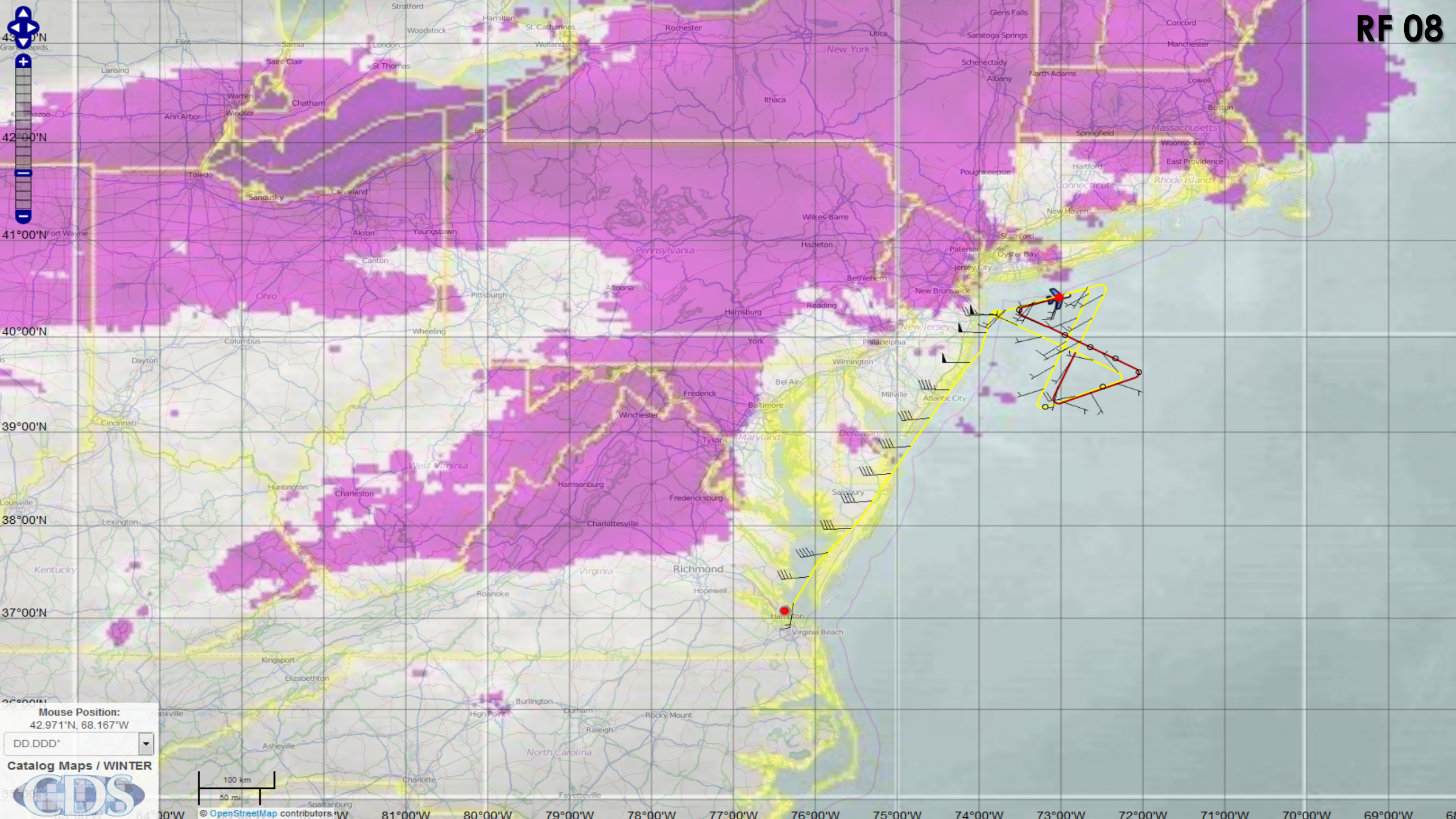
1°00'N

0°00'N

Mouse Position:
41.736°N, 68.178°W

DD.DDD°





43°00'N
Gran Rapids

42°00'N

41°00'N Fort Wayne

40°00'N

39°00'N

38°00'N

37°00'N

36°00'N

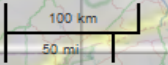
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DD.DDD°

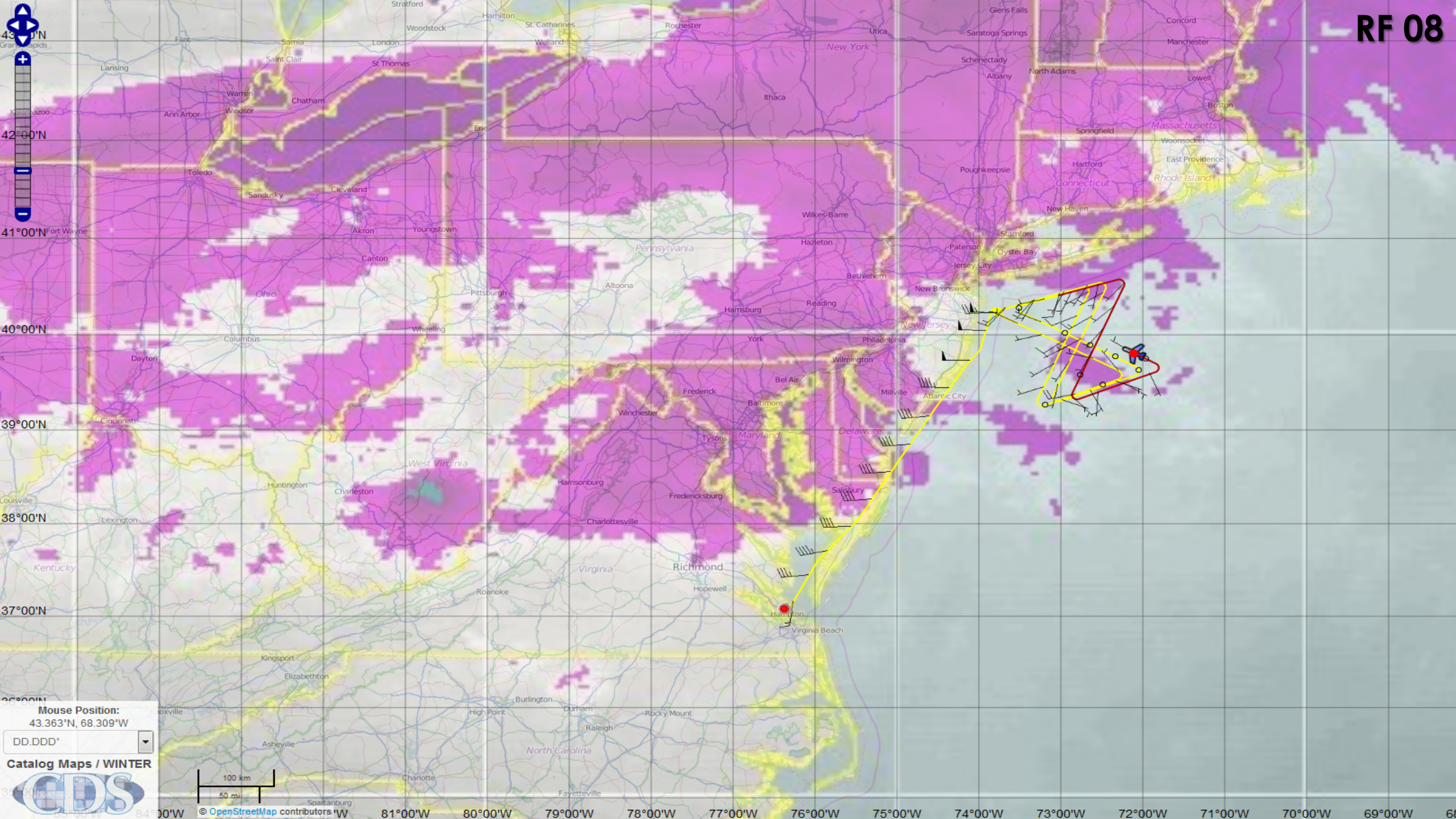
Catalog Maps / WINTER



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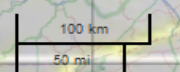


84°00'W 81°00'W 80°00'W 79°00'W 78°00'W 77°00'W 76°00'W 75°00'W 74°00'W 73°00'W 72°00'W 71°00'W 70°00'W 69°00'W

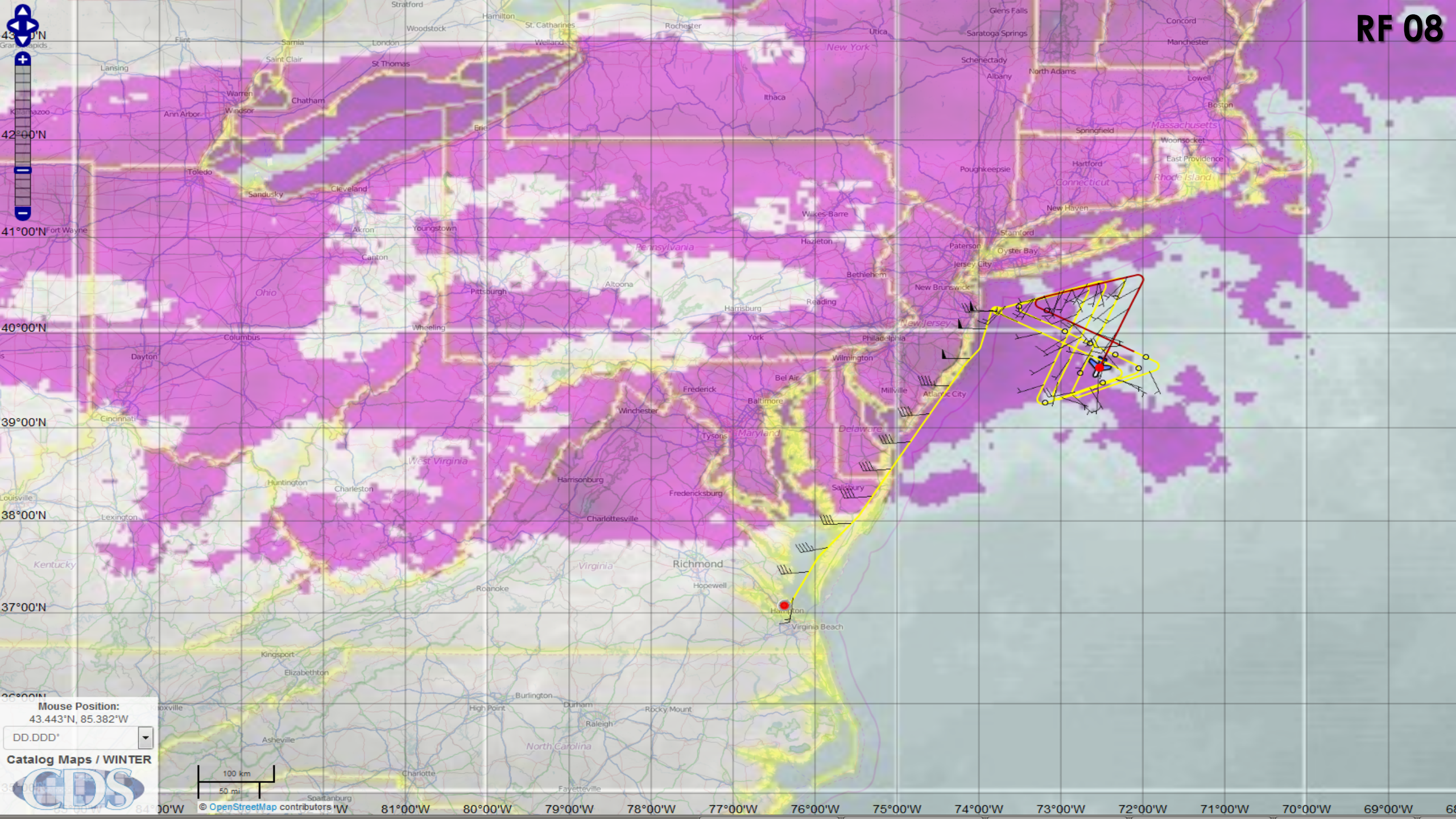


43°00'N
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Mouse Position:
 43.363°N, 68.309°W
 DD.DDD°

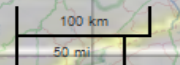


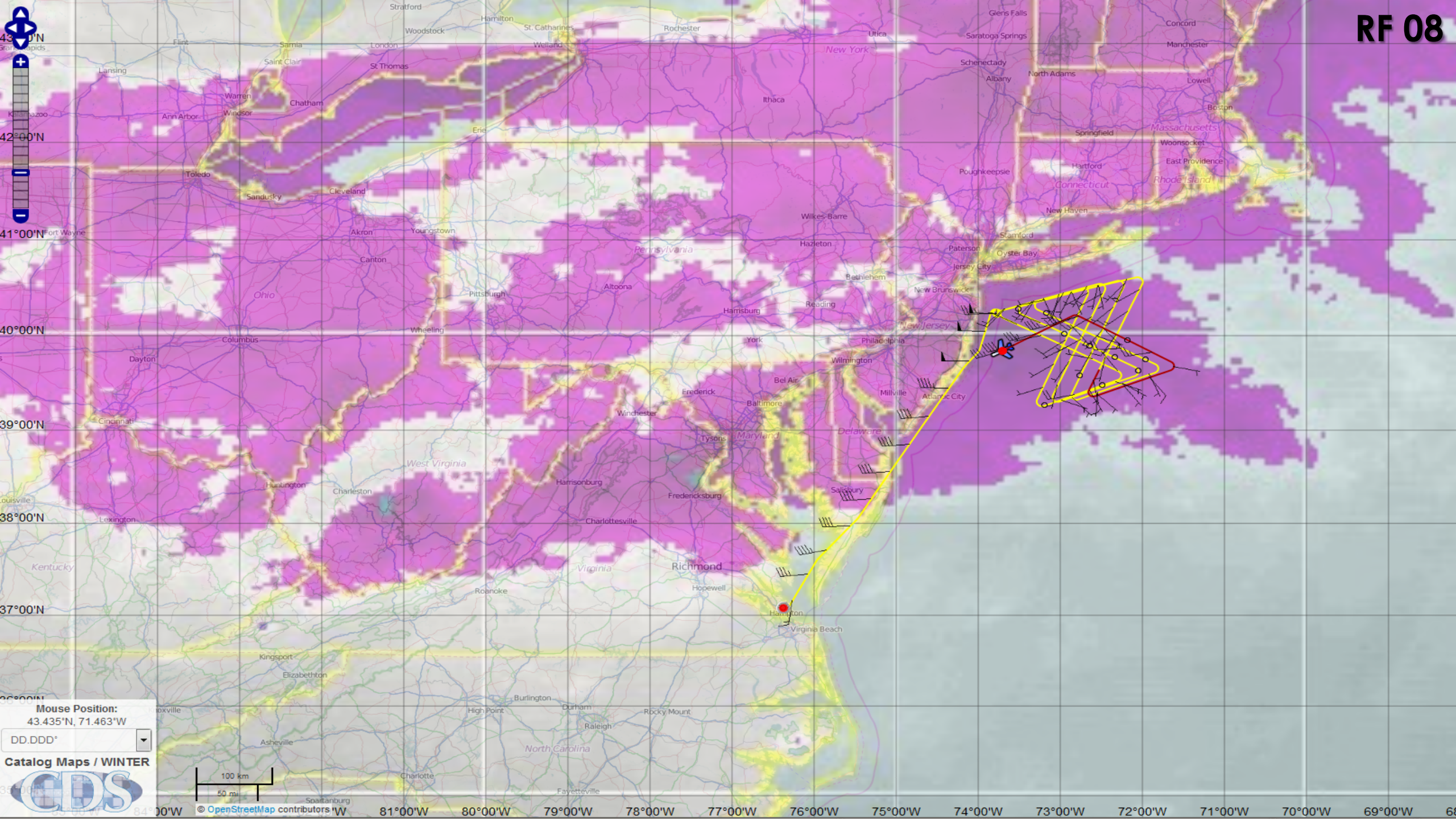
© OpenStreetMap contributors
 84°00'W 81°00'W 80°00'W 79°00'W 78°00'W 77°00'W 76°00'W 75°00'W 74°00'W 73°00'W 72°00'W 71°00'W 70°00'W 69°00'W



Mouse Position:
43.443°N, 85.382°W

DD.DDD°





43° 00' N
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36° 00' N

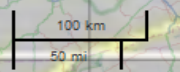
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DD.DDD°

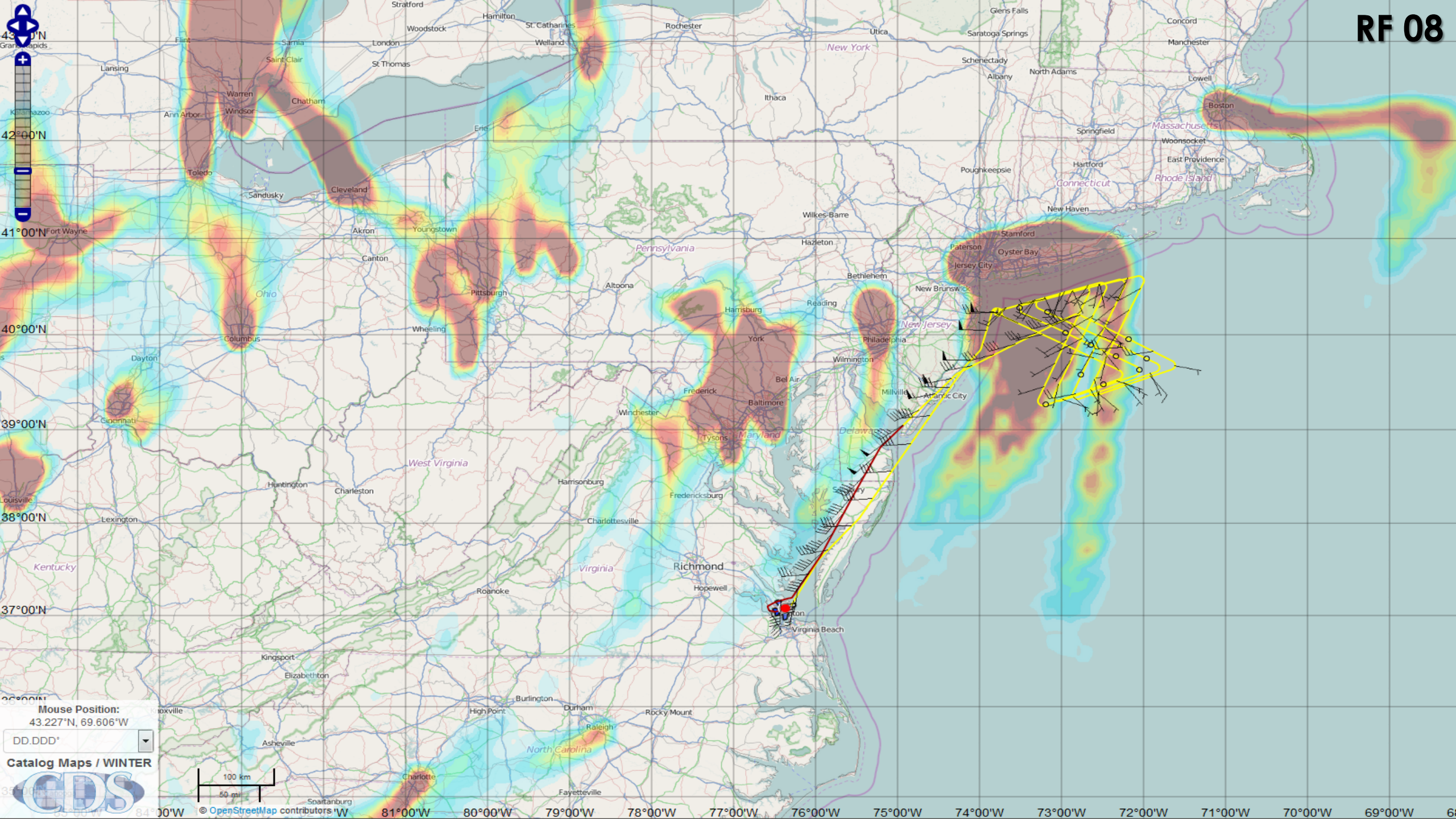
Catalog Maps / WINTER

CDS

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84° 00' W 81° 00' W 80° 00' W 79° 00' W 78° 00' W 77° 00' W 76° 00' W 75° 00' W 74° 00' W 73° 00' W 72° 00' W 71° 00' W 70° 00' W 69° 00' W

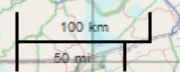


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37°00'N
36°00'N

Mouse Position:
43.227°N, 69.606°W

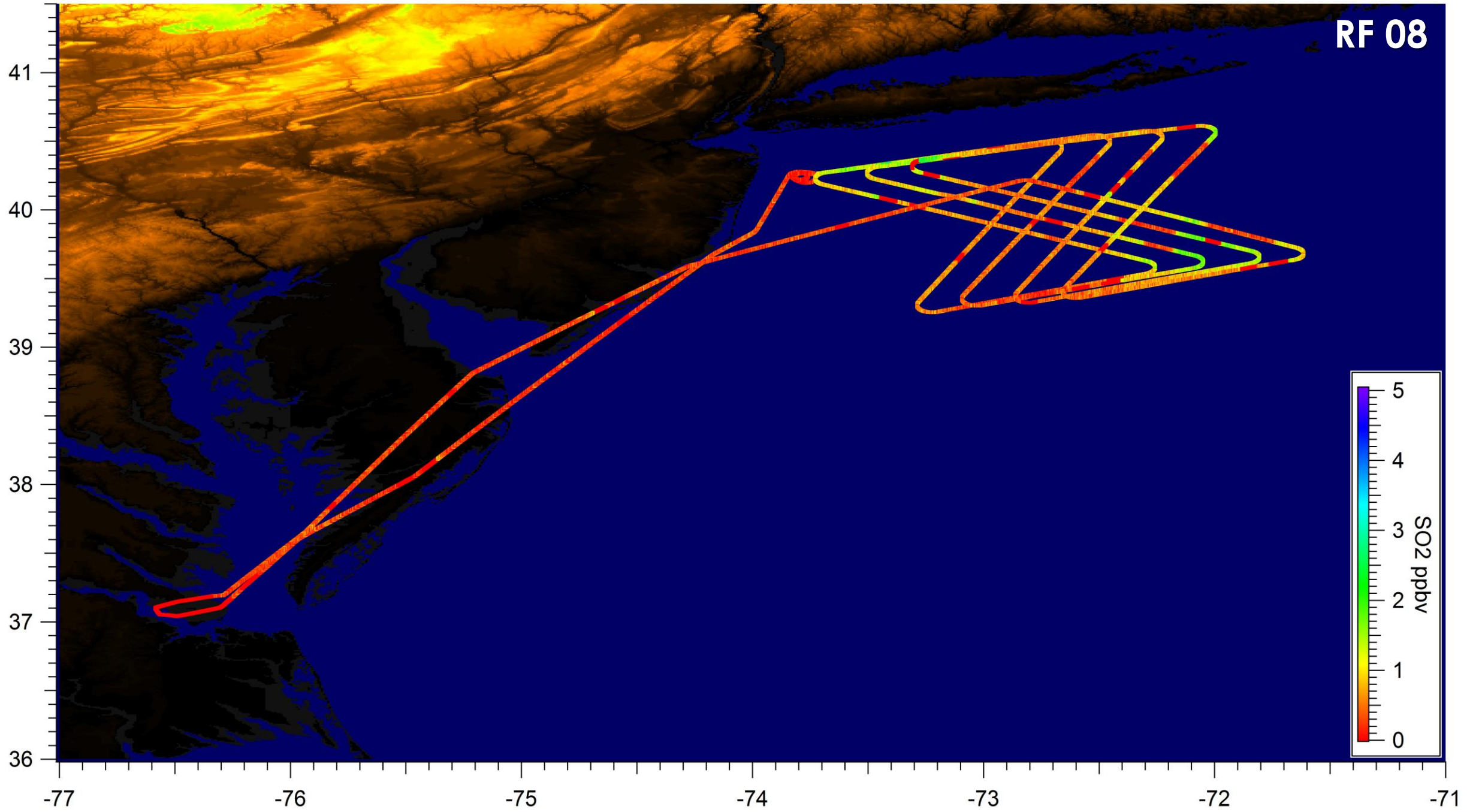
DD.DDD°

Catalog Maps / WINTER



84°00'W 81°00'W 80°00'W 79°00'W 78°00'W 77°00'W 76°00'W 75°00'W 74°00'W 73°00'W 72°00'W 71°00'W 70°00'W 69°00'W

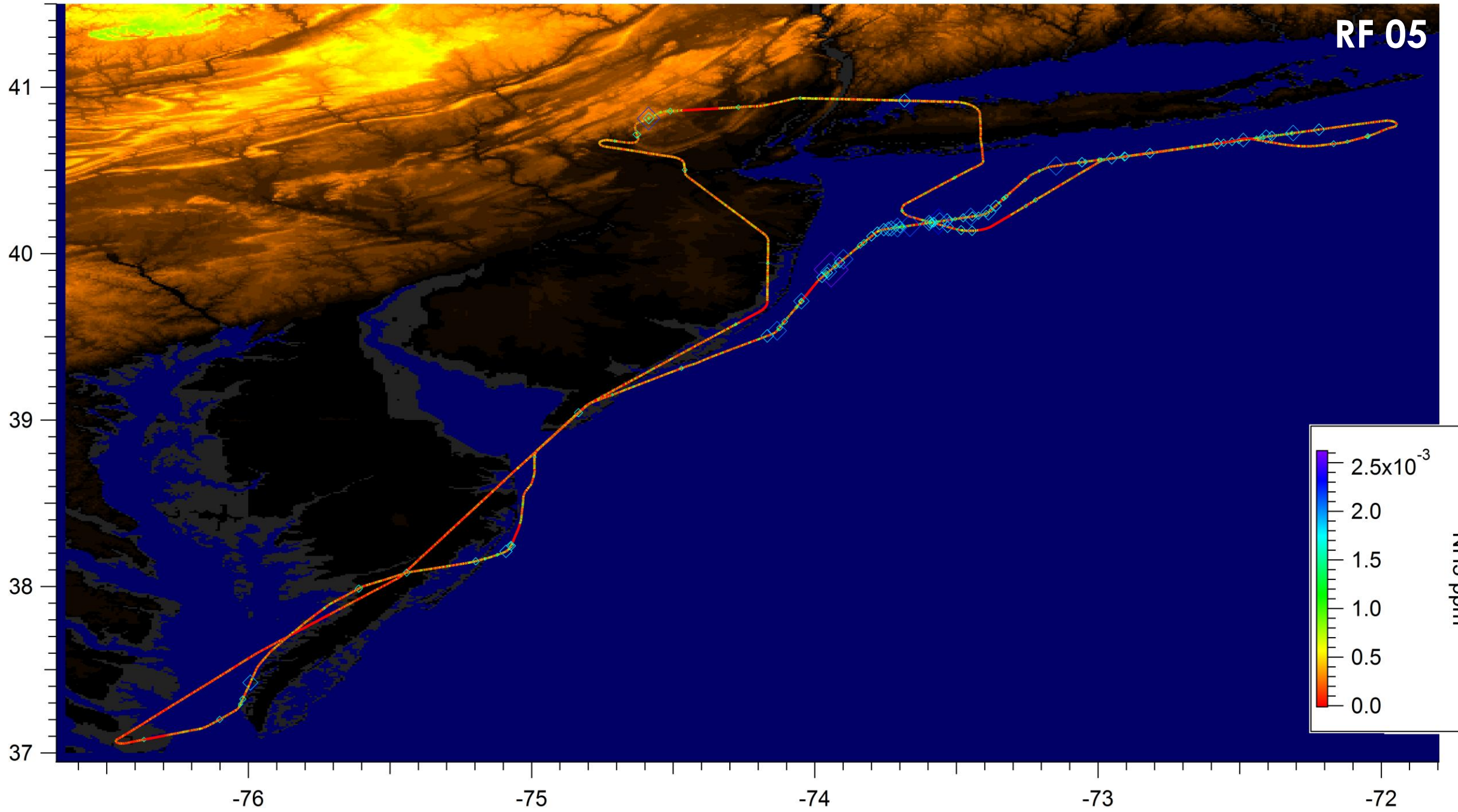
RF 08

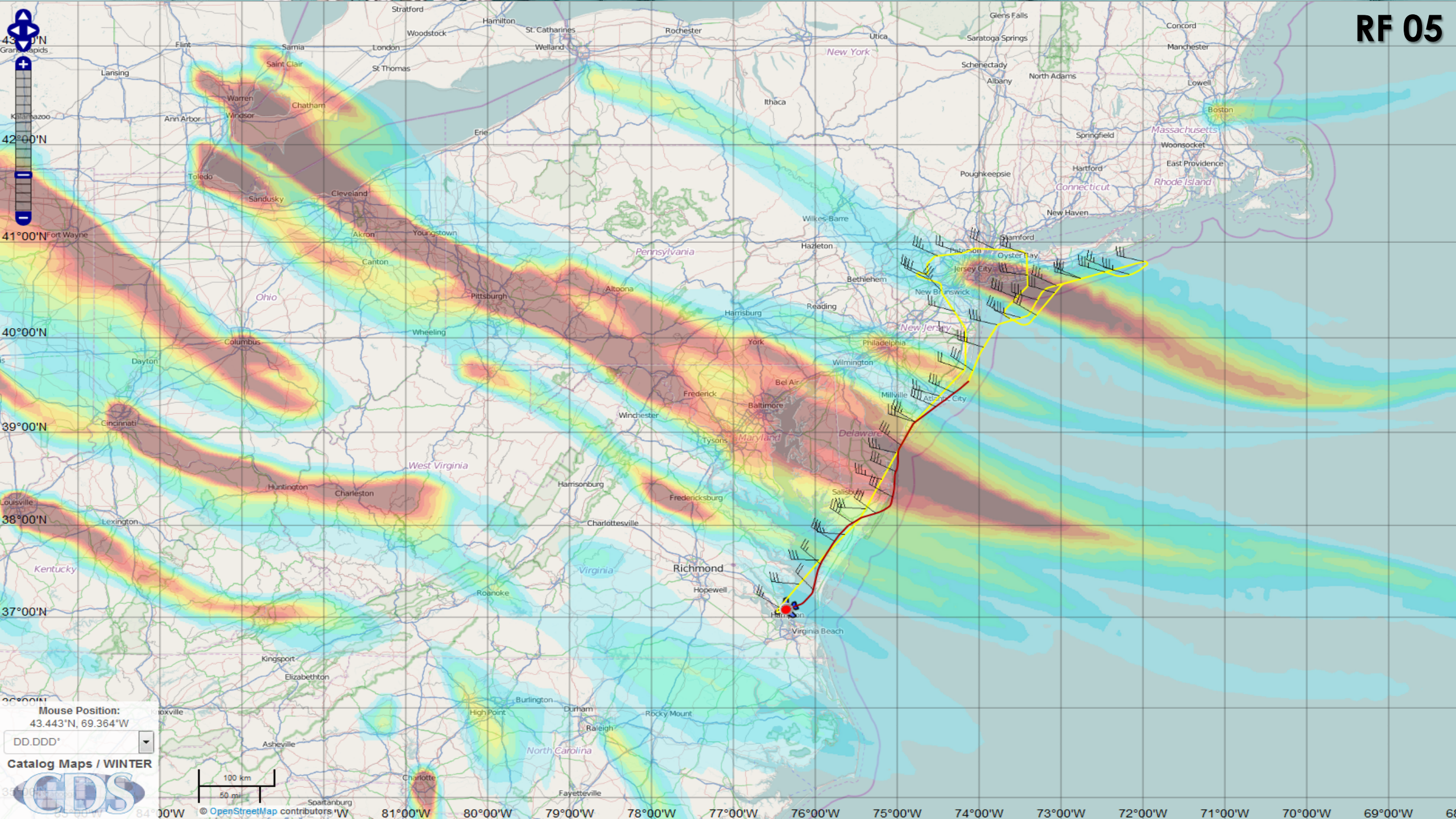


Questions From Observed Measurements

- ▶ To what degree does the local humidity or cloud cover affect the gaseous concentration?
- ▶ Effective SO_2 lifetime decrease under these changing conditions?
- ▶ In areas where there is no precipitation :
 - ▶ Expected sulfur transport by the mobile cloud layer?
 - ▶ Deposition or Uptake?

RF 05



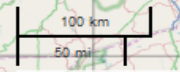


Mouse Position:
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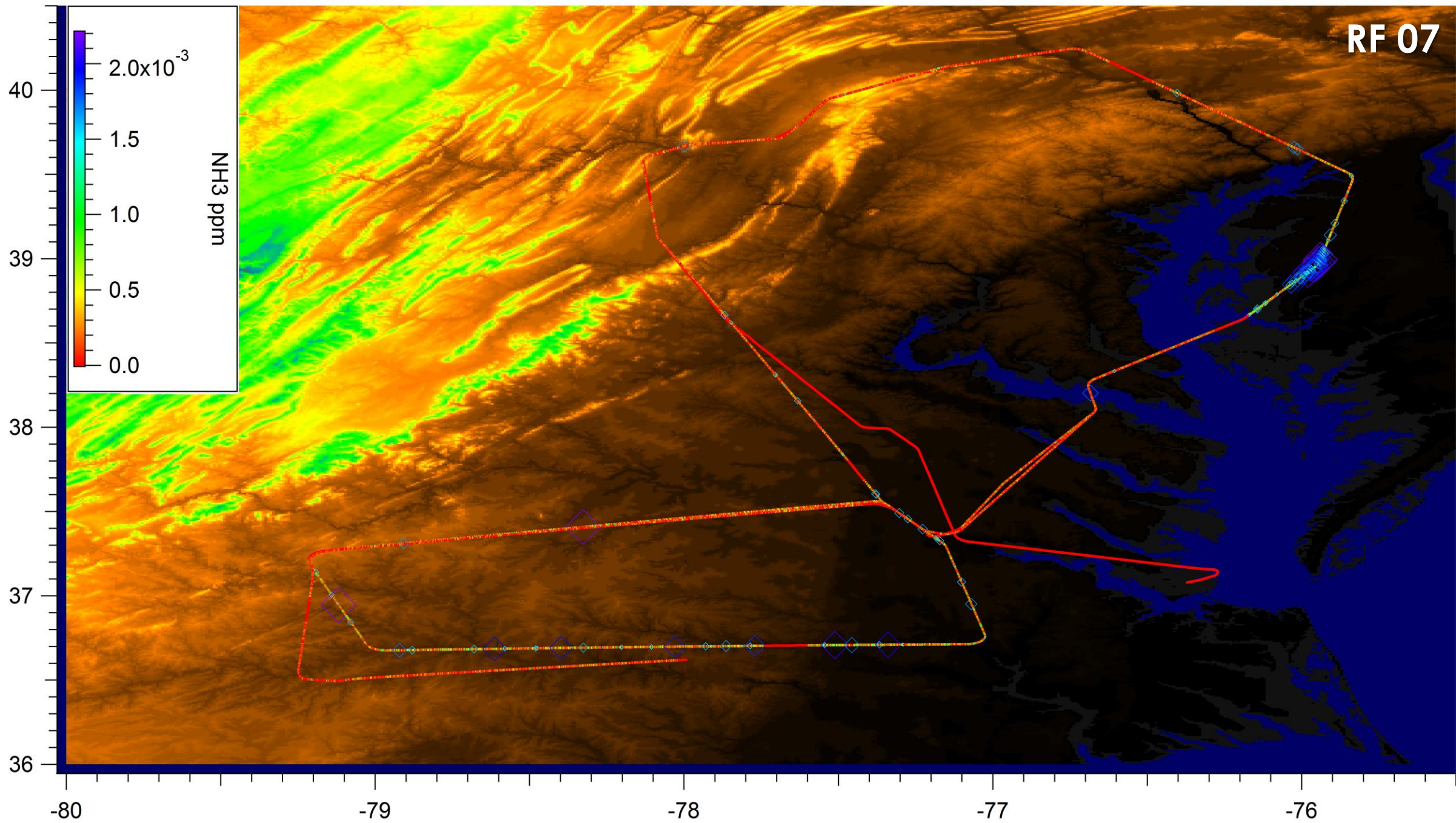
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Catalog Maps / WINTER

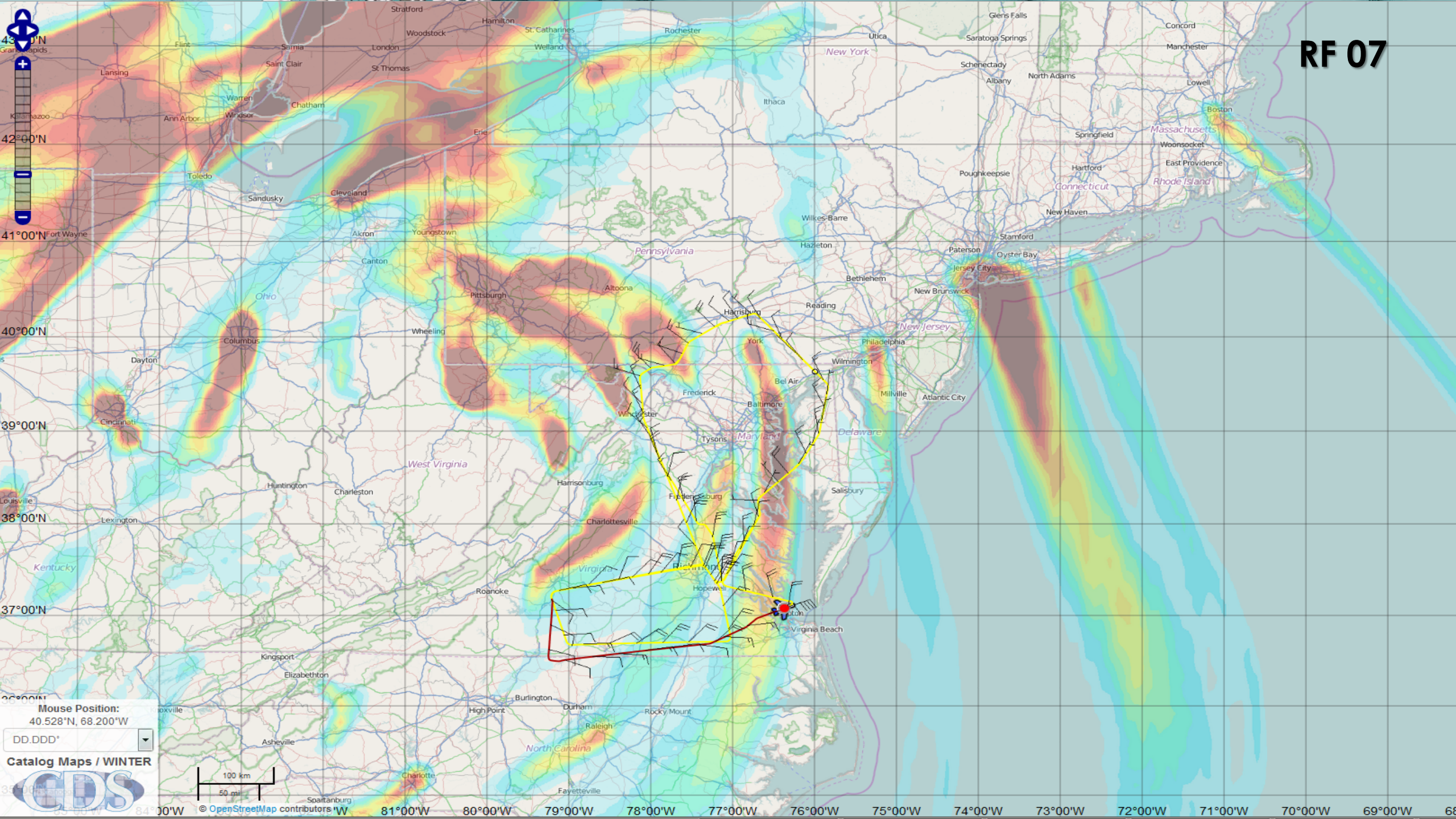
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84°00'W 81°00'W 80°00'W 79°00'W 78°00'W 77°00'W 76°00'W 75°00'W 74°00'W 73°00'W 72°00'W 71°00'W 70°00'W 69°00'W



RF 07



43°00'N
Grand Rapids

42°00'N
Kalamazoo

41°00'N
Fort Wayne

40°00'N

39°00'N

38°00'N
Louisville

37°00'N

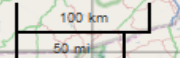
36°00'N

Mouse Position:
40.528°N, 68.200°W

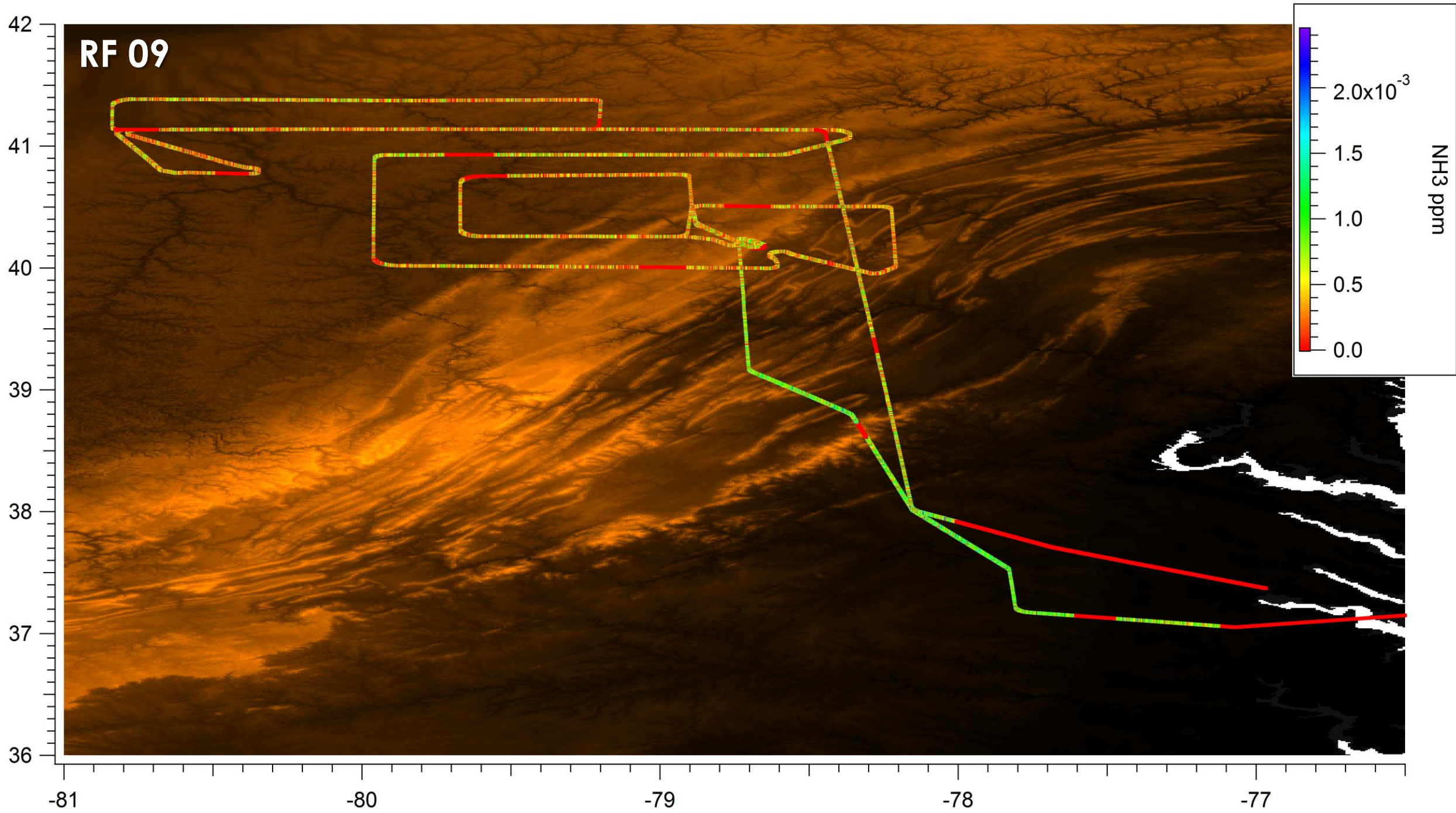
DD.DDD°

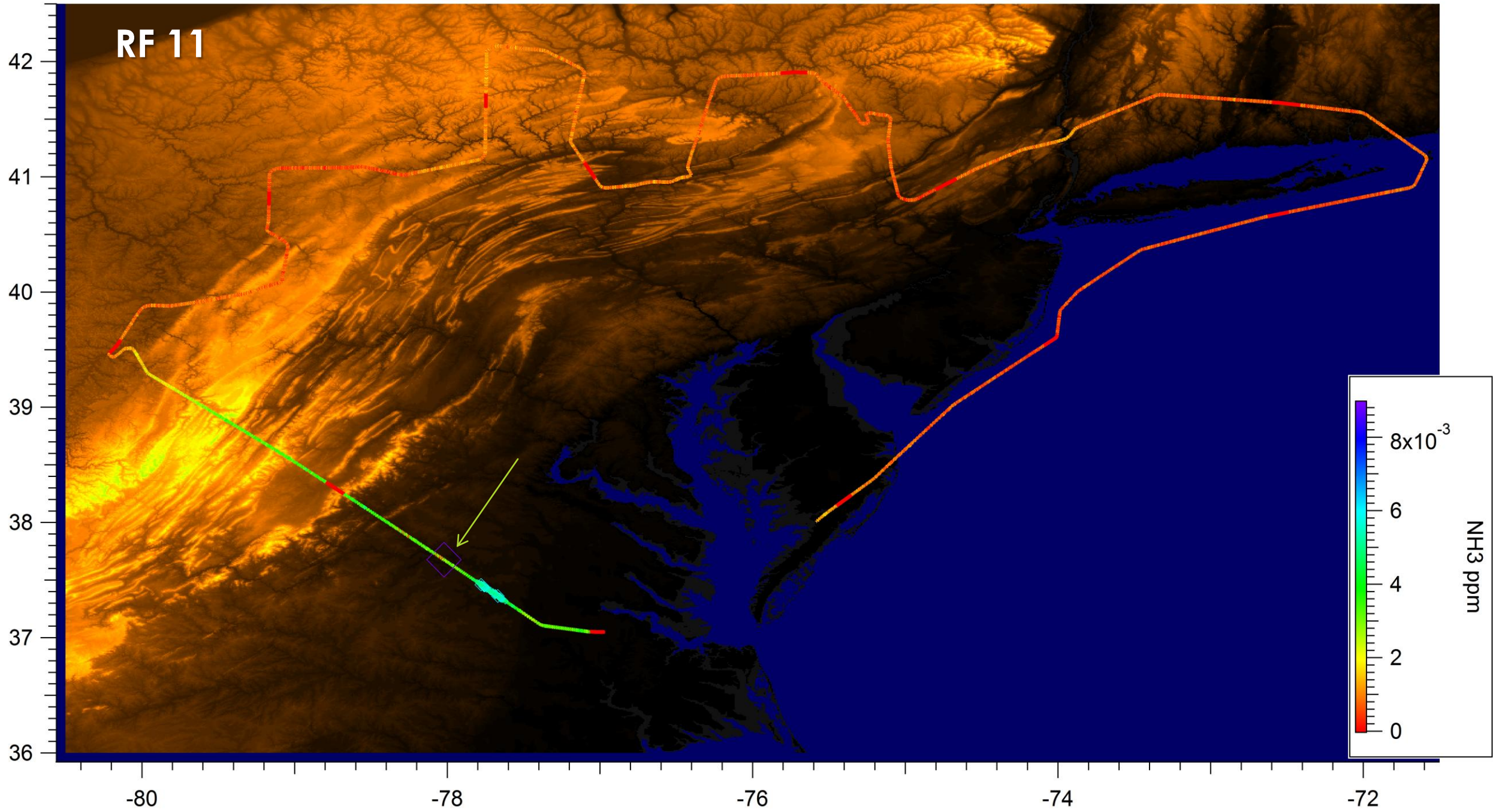
Catalog Maps / WINTER

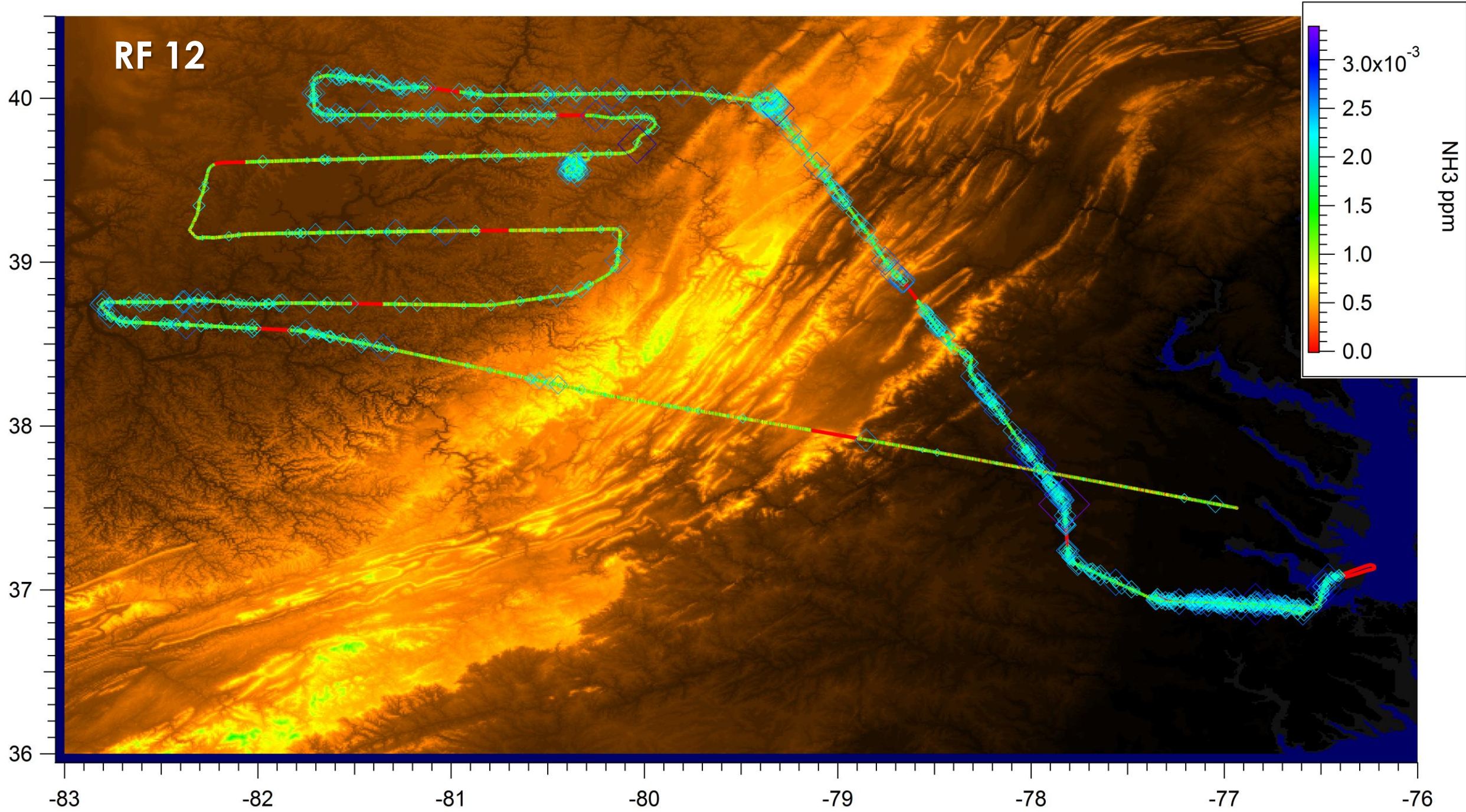
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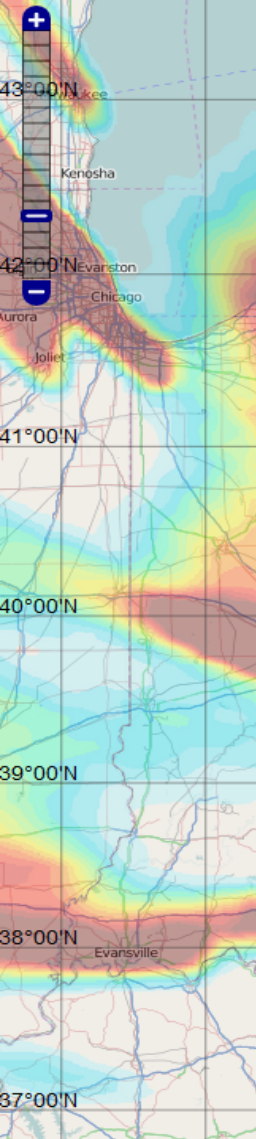
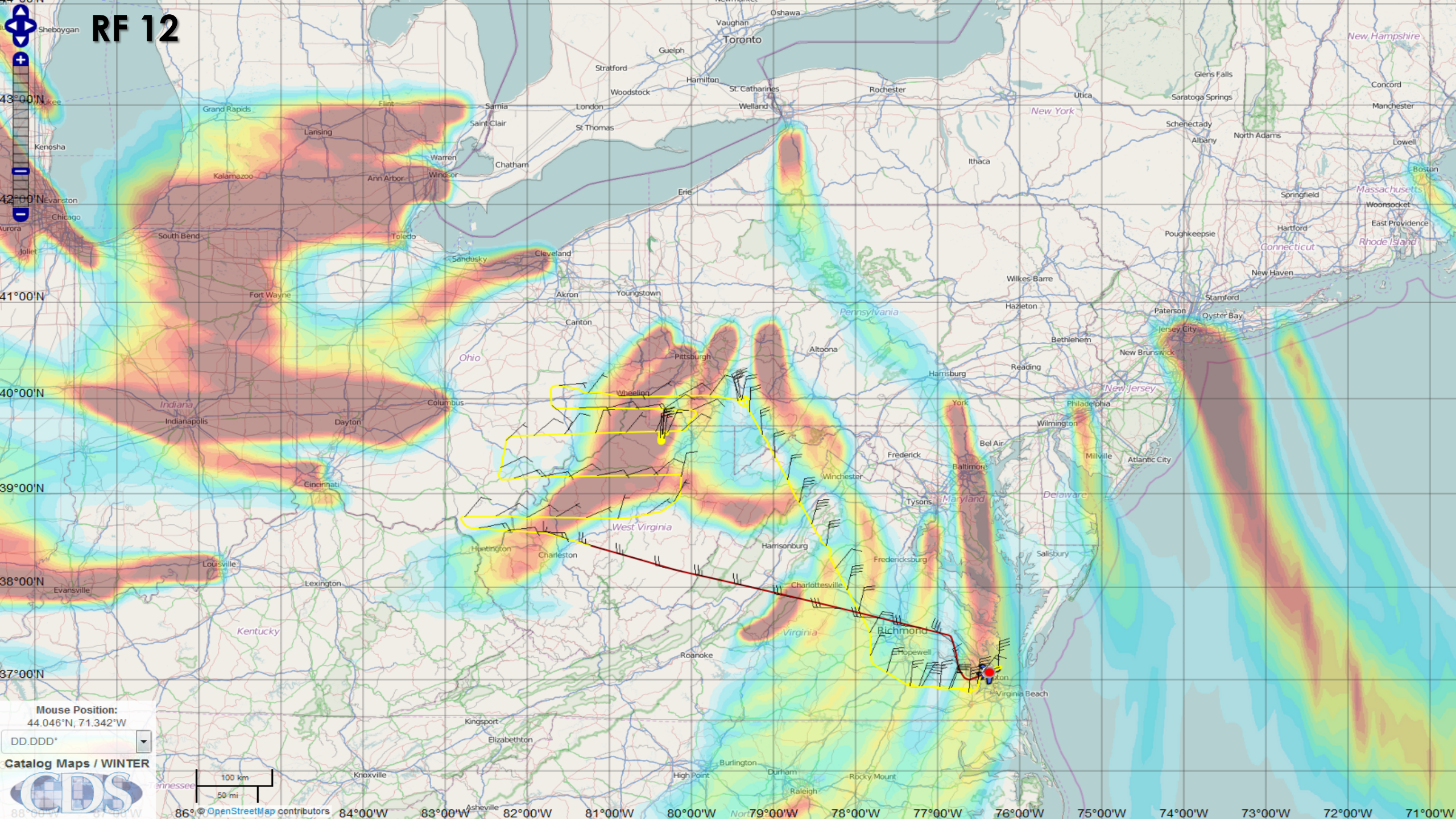


84°00'W 81°00'W 80°00'W 79°00'W 78°00'W 77°00'W 76°00'W 75°00'W 74°00'W 73°00'W 72°00'W 71°00'W 70°00'W 69°00'W









Mouse Position:
44.046°N, 71.342°W

DD.DDD°

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NH₃ Preliminary data

- ▶ Rough estimate (files contained noise and low continuity)
- ▶ Seems to be consistently in low concentrations (1-3 ppb) in regions of pollution
 - ▶ Reactivity with NO_x and SO₂
- ▶ Higher concentrations in regions free of chemical plumes