5:58 30°
MARCH BLIZZARD
Weather Alert
Governor Activates National Guard
4

Try Pitch

US BLIZZARD '19

ANDREAS
KAMIL
MARKUS
SELINA

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Content

01 HYPOTHESES
02 BACKGROUND
03 INSIGHTS

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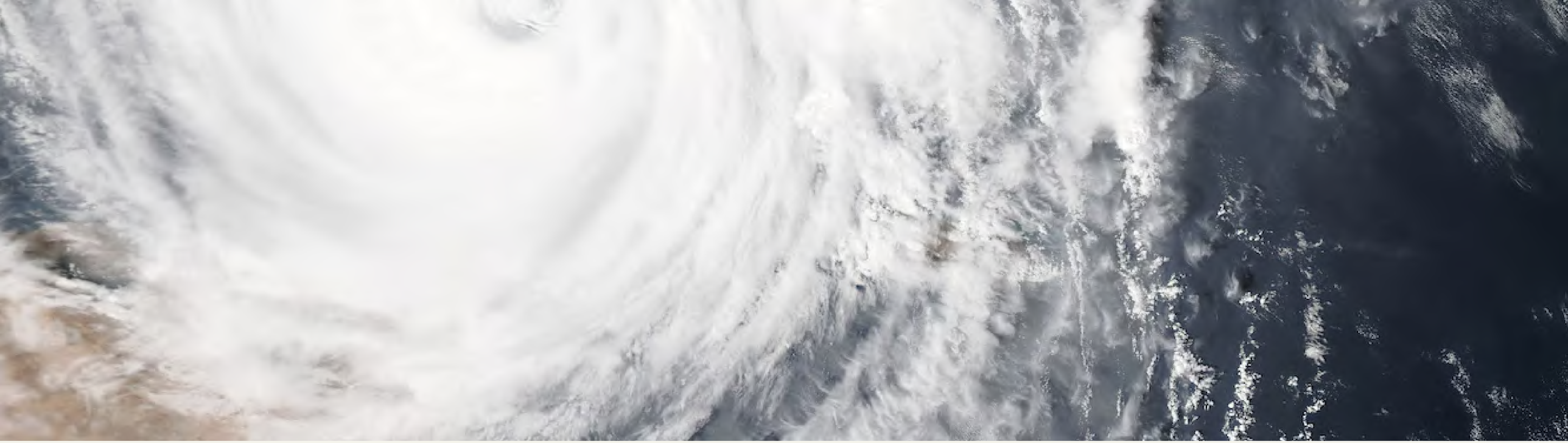

01 HYPOTHESES

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01 HYPOTHESES

I. Do we have a correlation between extreme weather conditions and the number of delayed or cancelled flights?

- H_0 : There is no correlation.

II. Were Airports that were not directly in the epicenter of the blizzard still affected by the extreme weather conditions?

- H_0 : Only the epicenter affects airports.

III. Did the air pressure influence the cancellation count and amount of delays?

- H_0 : The air pressure is not significant.

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Data Analysis Approach

50352 rows x 43 rows in final DF

GLIEDERUNG

- March 2019 North American Blizzard flights and weather EDA
  - Preparation and data retrieval
    - Imports
    - Path and download/unzipping
  - Dataframe creation and cleaning
    - Flights dataframe creation from csv
    - Preparing the csv file for further processing
    - Airport dataframe retrieval, cleaning and merging with flights
    - Cleaning of final flights dataframe
  - EDA of flights dataframe
    - Counting to see how big our sample sizes are
    - Groupbys with cancelled percentages for origin airports
    - Plotting origin insights
    - Groupbys for destination flights cancellations
    - Delay sum in origin airpots
    - Delay sum in destination airports
  - Push the prepared data to a table in the database

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GLIEDERUNG

- Meteostat API
  - Importing packages
  - Connection to API
    - Airport locations related to the US blizzard in 2019 (March)
    - Retrieving data from URL
    - Assessing weather dataframe
    - Filling data according to META-DATA and "coco"'s uniques values
    - Performing Simple EDA
  - Final Call of Cleaned Dataframe

160 rows x 9 columns in final DF

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02

BACKGROUND

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02 AIRPORTS & #FLIGHTS

DEN

DENVER INTERNATIONAL AIRPORT

DENVER COLORADO

5927 FLIGHTS MARCH 8 - 16

BHM

BIRMINGHAM-SHUTTLESWORTH

INTERNATIONAL AIRPORT

BIRMINGHAM ALABAMA

457 FLIGHTS MARCH 8 - 16

DFW

DALLAS/FORTH WORTH

INTERNATIONAL AIRPORT

DALLAS TEXAS

7105 FLIGHTS MARCH 8 - 16

DSM

DES MOINES INTERNATIONAL AIRPORT

DES MOINES IOWA

432 FLIGHTS MARCH 8 - 16

OKC

WILLI ROGERS WORLD AIRPORT

OLKAHOMA CITY OLKAHOMA

574 FLIGHTS MARCH 8 - 16

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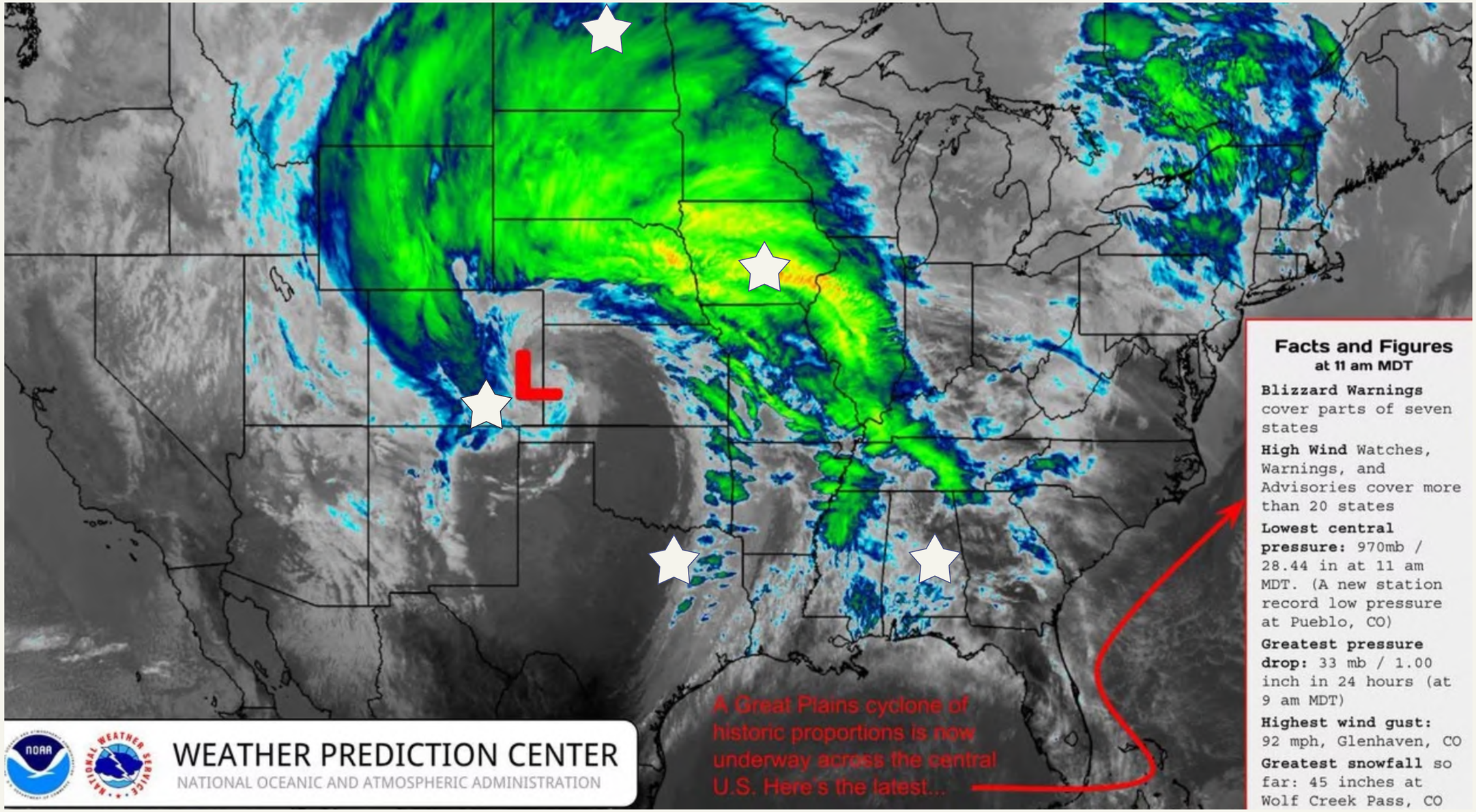
BLIZZARD



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MARCH '19 NORTH AMERICAN BLIZZARD

MARCH 08, 2019 - MARCH 16, 2019

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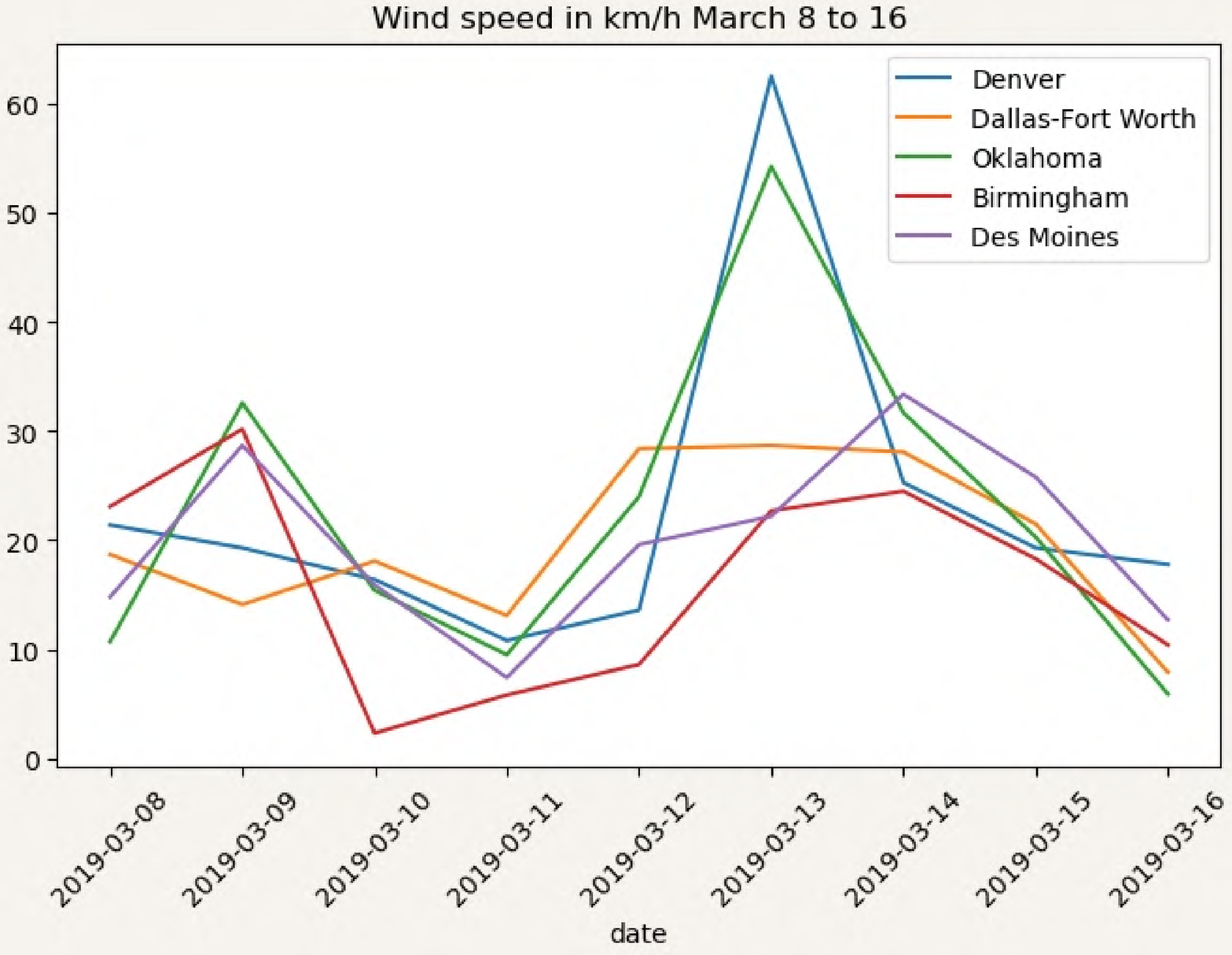
WEATHER CONDITIONS

Date	DEN	DFW	OKC	BHM	DSM
03/11	Cloudy	Light Rain	Light Rain	Light Rain	Fair
03/12	Overcast	Rain	Rain	Cloudy	Heavy Thunderstorm
03/13	Heavy Snowfall	Heavy Rain Shower	Fair	Light Rain	Rain
03/14	Cloudy	Fair	Fair	Rain	Light Snowfall

02 WIND SPEED

MARCH '19 NORTH AMERICAN BLIZZARD

MARCH 08, 2019 - MARCH 16, 2019

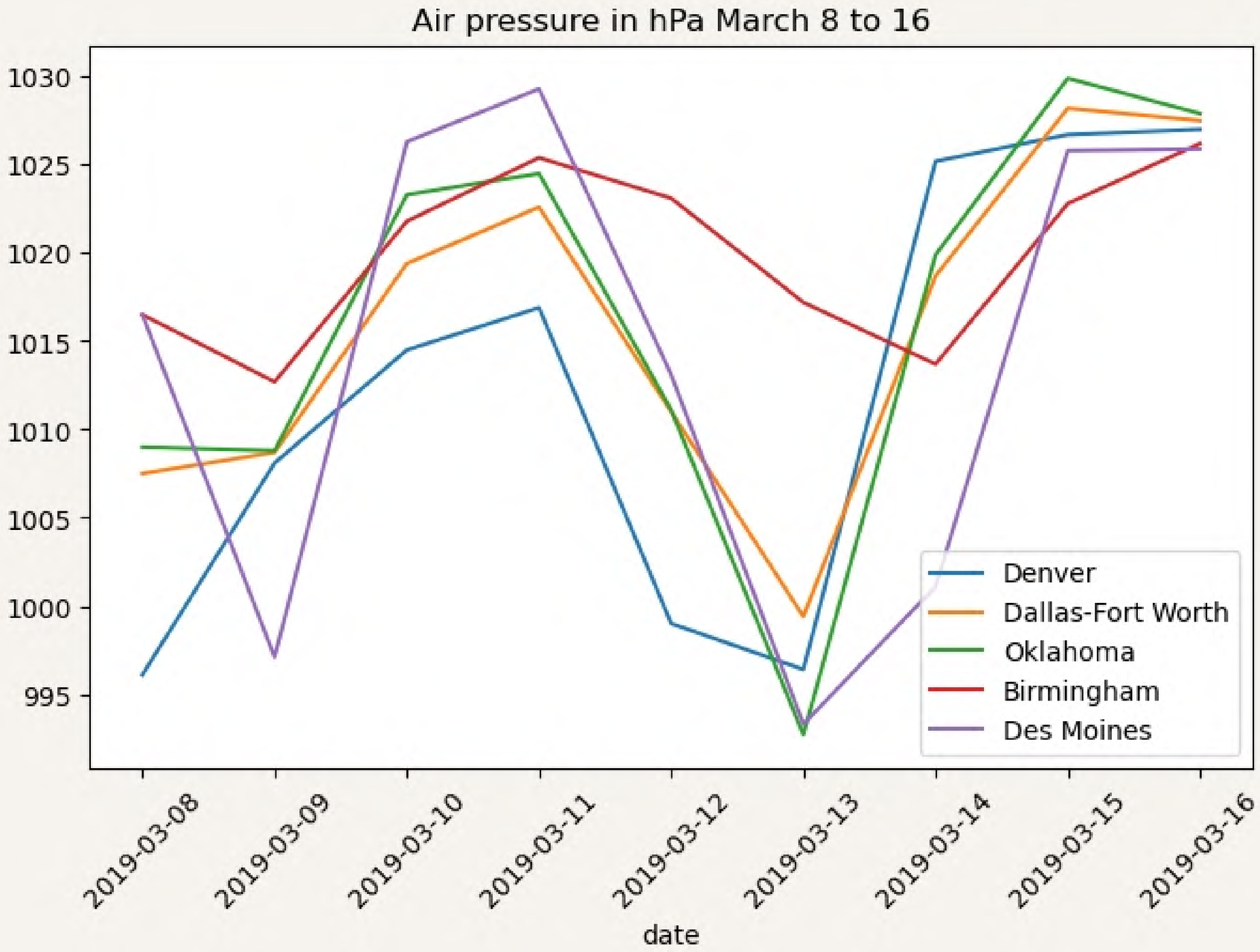


02 AIR PRESSURE

MARCH 19 NORTH AMERICAN BLIZZARD

MARCH 08, 2019 - MARCH 16, 2019

Try Pitch



03 INSIGHTS

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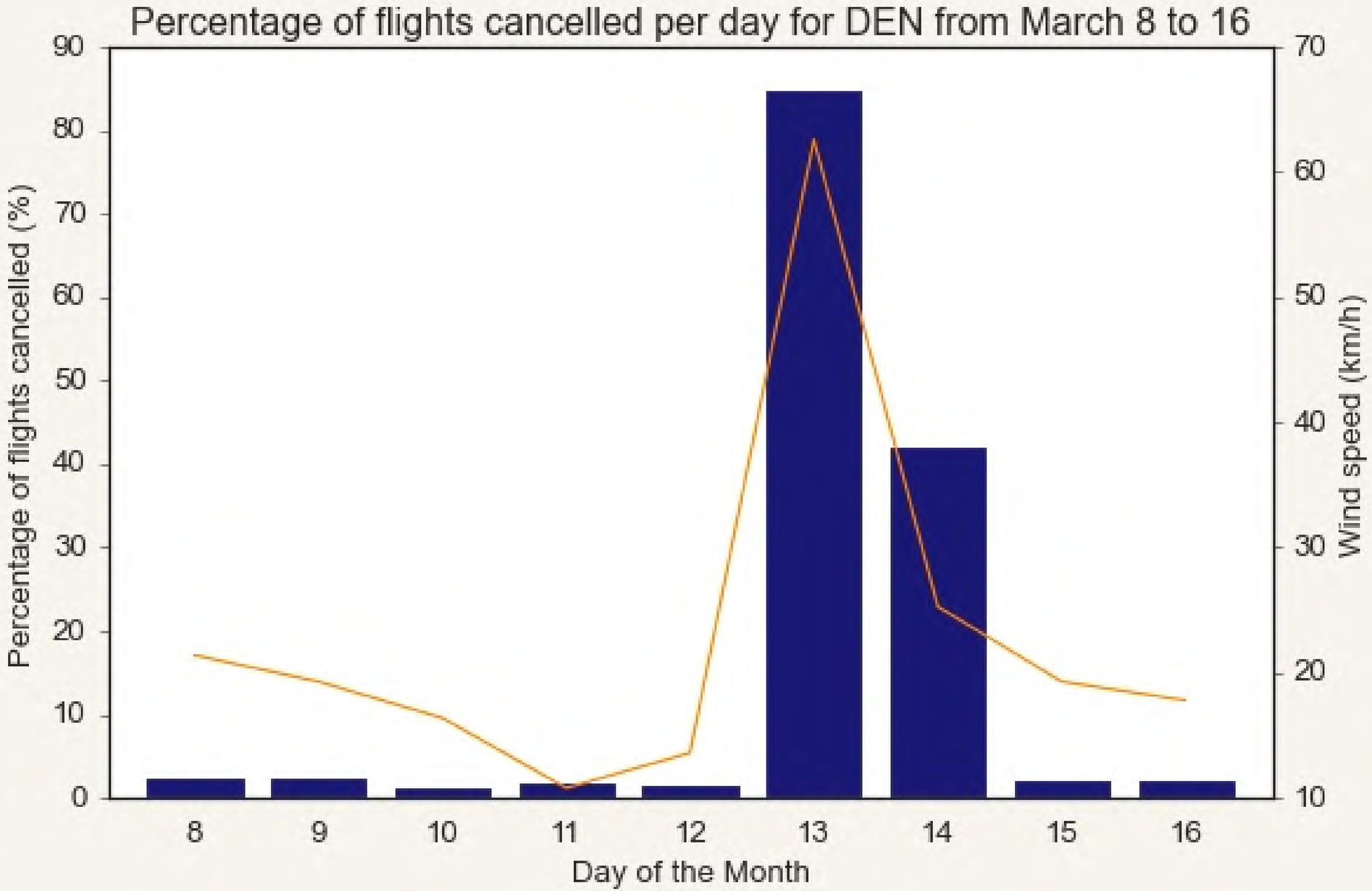
03 CANCELLED FLIGHTS VS. WIND - DENVER



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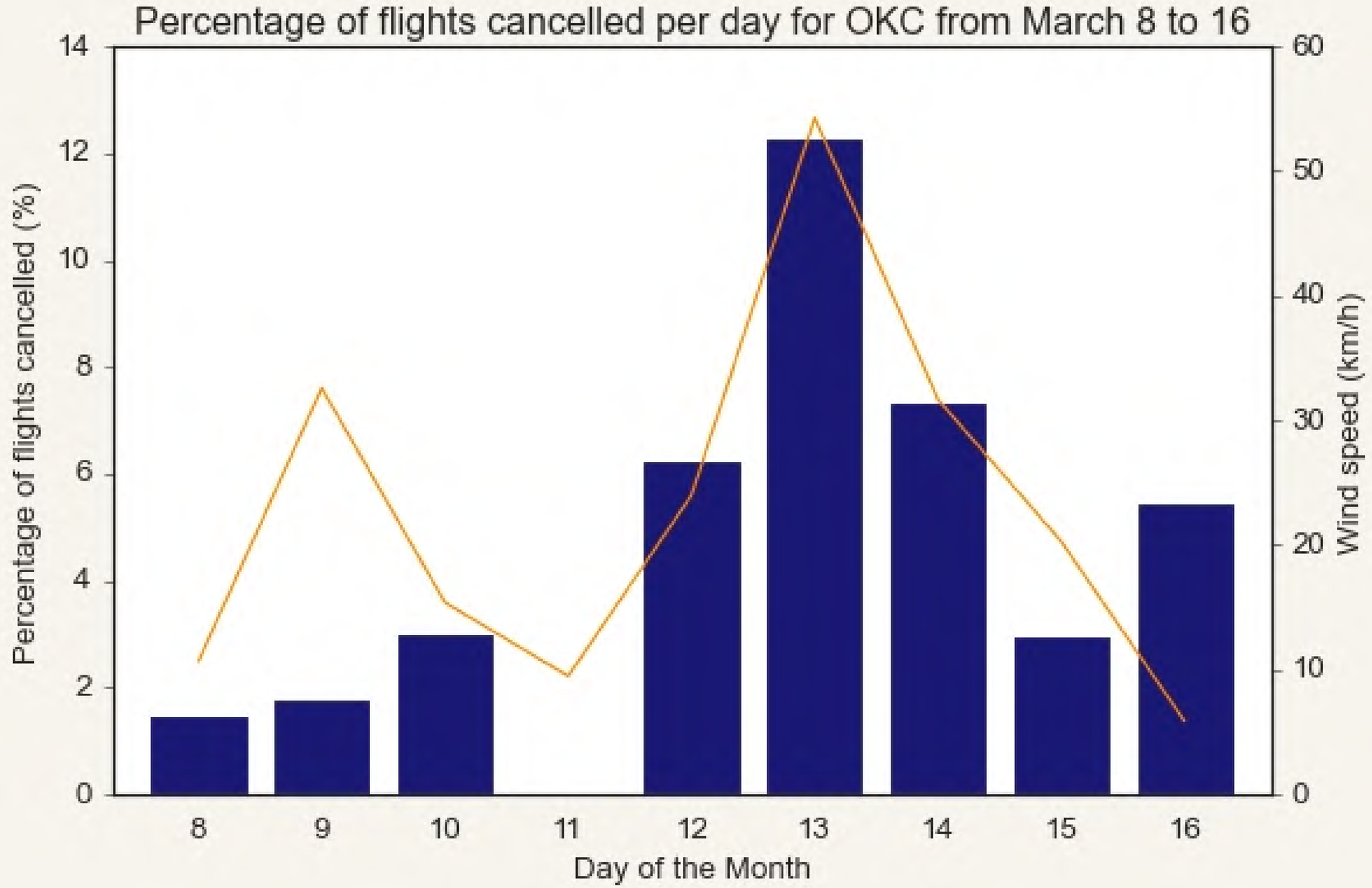
03 CANCELLED FLIGHTS VS. WIND - OKLAHOMA



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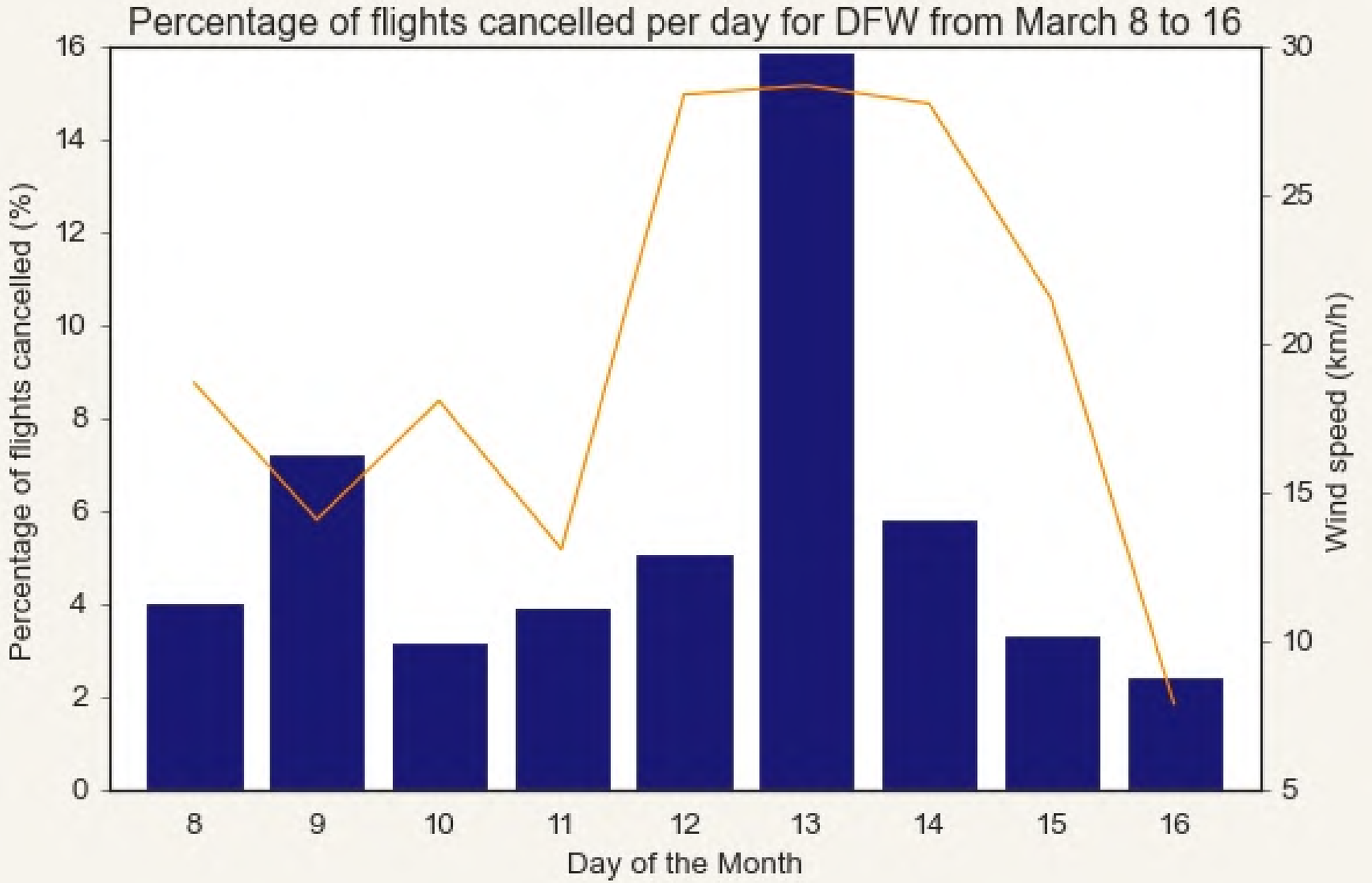
03 CANCELLED FLIGHTS VS. WIND - DALLAS



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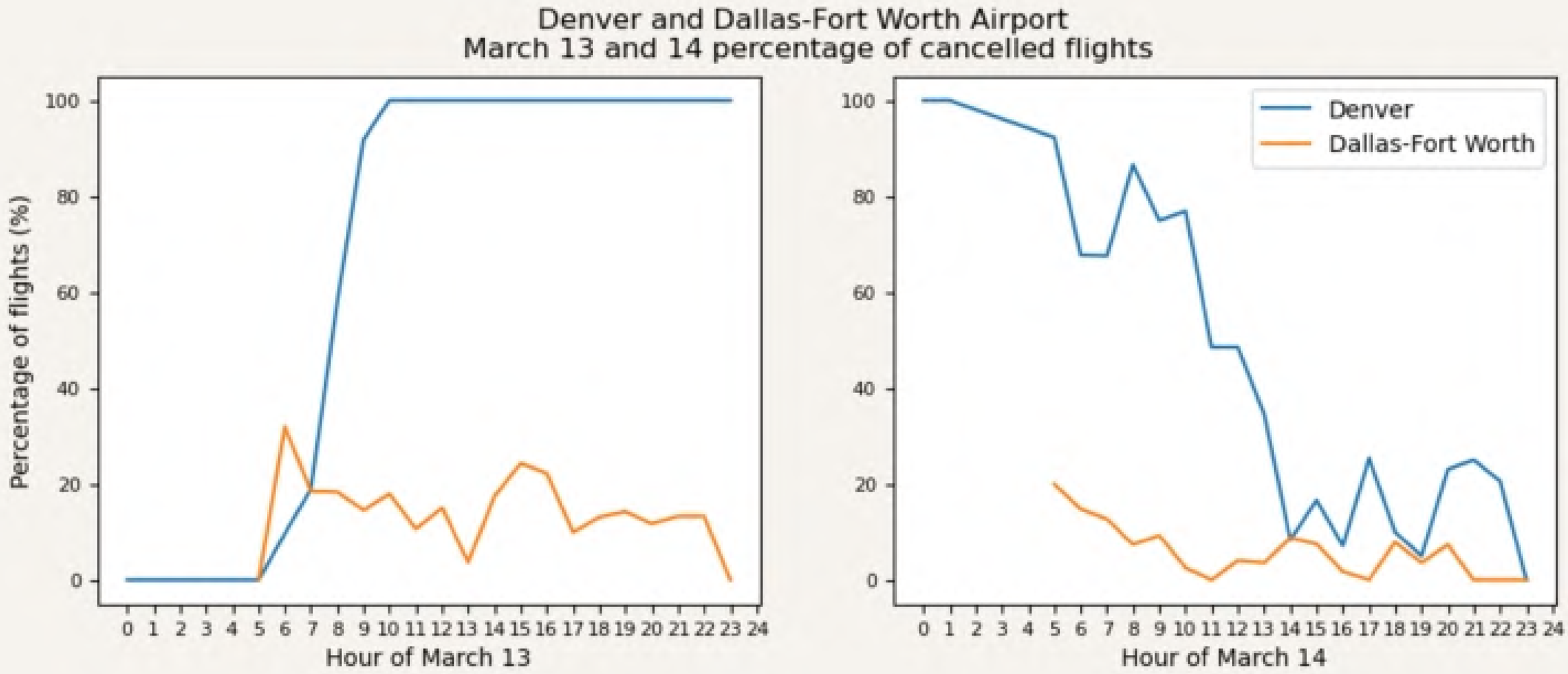
03 CANCELLED FLIGHTS - PEAK DAYS



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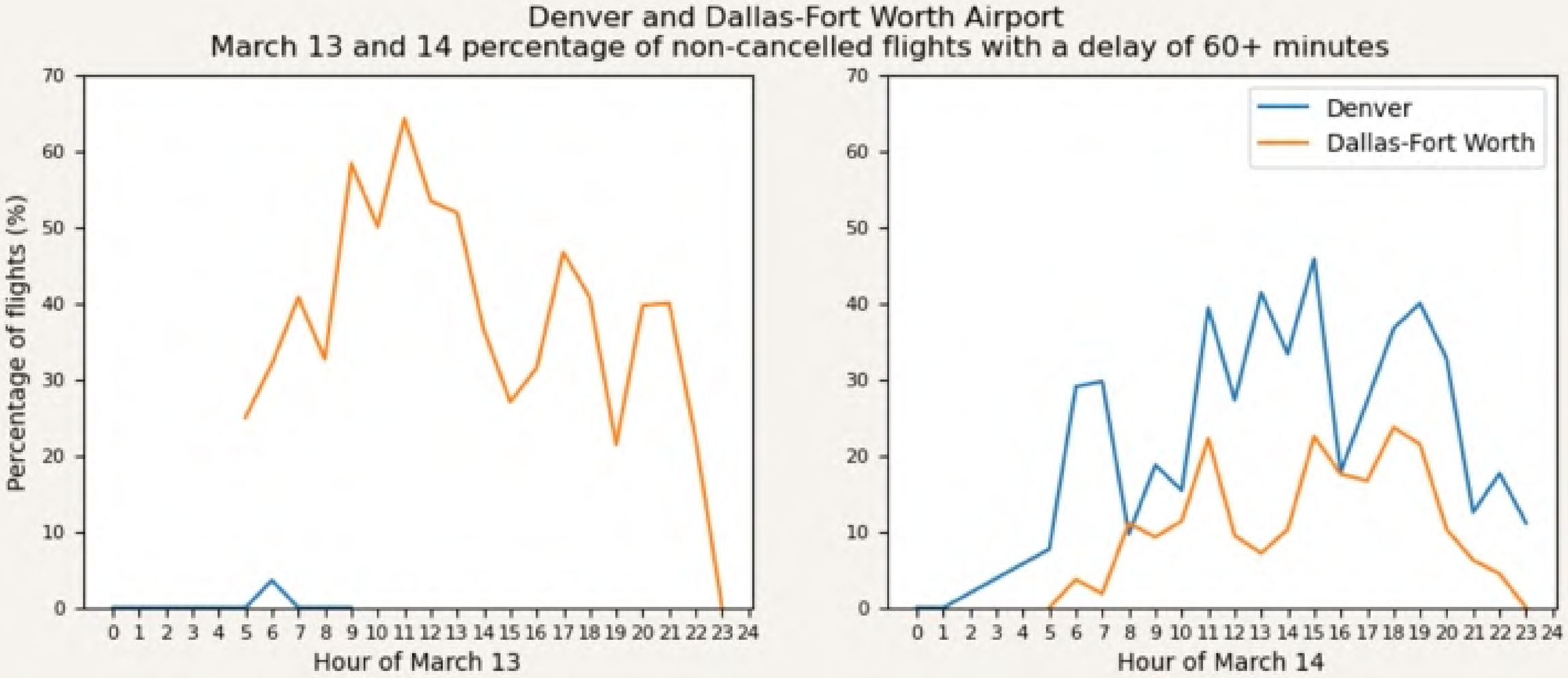
03 FLIGHTS WITH 60+ MIN DELAY



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03 INSIGHTS

Based on our analysis snowfall is likely causing more cancellations than high wind speeds alone.

Even airports that were not directly in the epicenter of the blizzard, had high cancellation counts and delayed flights.

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THANK YOU

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