DASHlink multi-class anomaly classification data
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filename: DASHlink_full_fourclass_raw.npz
Full raw version of the data available here: https://c3.nasa.gov/dashlink/projects/85/

How to read the data: you can read the data in Python following below script:

```
import numpy as np

full_data = np.load(filename)
data = full_data[data']
label = full_data['label']
```

Classes of data, i.e. ys: labels indicate the class that data belong to:

Class	Class index
Nominal	0
Speed High	1
Path High	2
Flaps Late Setting	3

Instances of data, i.e. Xs: each instance of data is 160×20 dimension, where the first dimension corresponds to window of time in seconds and the second dimension is the measured variables. The following table lists all the 20 variables and their description:

Variable Name	Variable index	Description	Type / Unit
AILERON POSITION LH	0	Left Aileron position (Fig 1)	Degree
AILERON POSITION RH	1	Right Aileron position (Fig 1)	Degree
CORRECTED ANGLE OF ATTACK	2	Refer to Fig 2	Degree
BARO CORRECT ALTITUDE LSP	3	Altitude	Feet
COMPUTED AIRSPEED LSP	4	Airspeed of the aircraft	Knots
SELECTED COURSE	5	Selected course for autopilot mode	Degree
DRIFT ANGLE	6	The angle between the aircraft heading and the aircraft track	Degree
ELEVATOR POSITION LEFT	7	Left elevator position (Fig 1)	Degree
T.E. FLAP POSITION	8	The degree which the flaps are deployed (Fig 1).	Discrete
GLIDESLOPE DEVIATION	9	Deviation from glide slope in approach in difference in the depth of modulation[1]	Percentage
SELECTED HEADING	10	Desired heading selected for autopilot	Degree

[1] https://en.wikipedia.org/wiki/Final_approach_(aeronautics)
[2] https://en.wikipedia.org/wiki/Instrument_landing_system_localizer

LOCALIZER DEVIATION	11	Deviation from the axis of the runway in difference in the depth of modulation[2]	Percentage
CORE SPEED AVG	12	Average rotational speed of the low-pressure compressor component of the four engines (measured as a percentage of a max value) (direct indicator of throttle)	Percentage
TOTAL PRESSURE LSP	13	Total pressure	Millibar
PITCH ANGLE LSP	14	the angle between the longitudinal axis of the aircraft and the horizon (Fig 2)	Degree
ROLL ANGLE LSP	15	Refer to Fig 2	Degree
RUDDER POSITION	16	Position of the rudder (Fig 1)	Degree
TRUE HEADING LSP	17	True heading of the aircraft	Degree
VERTICAL ACCELERATION	18	Acceleration on the vatical axis	G
WIND SPEED	19	Wind speed	Knots

The following figure shows the figure of where is the location of the control surface variable and visual illustration of the positional variables:
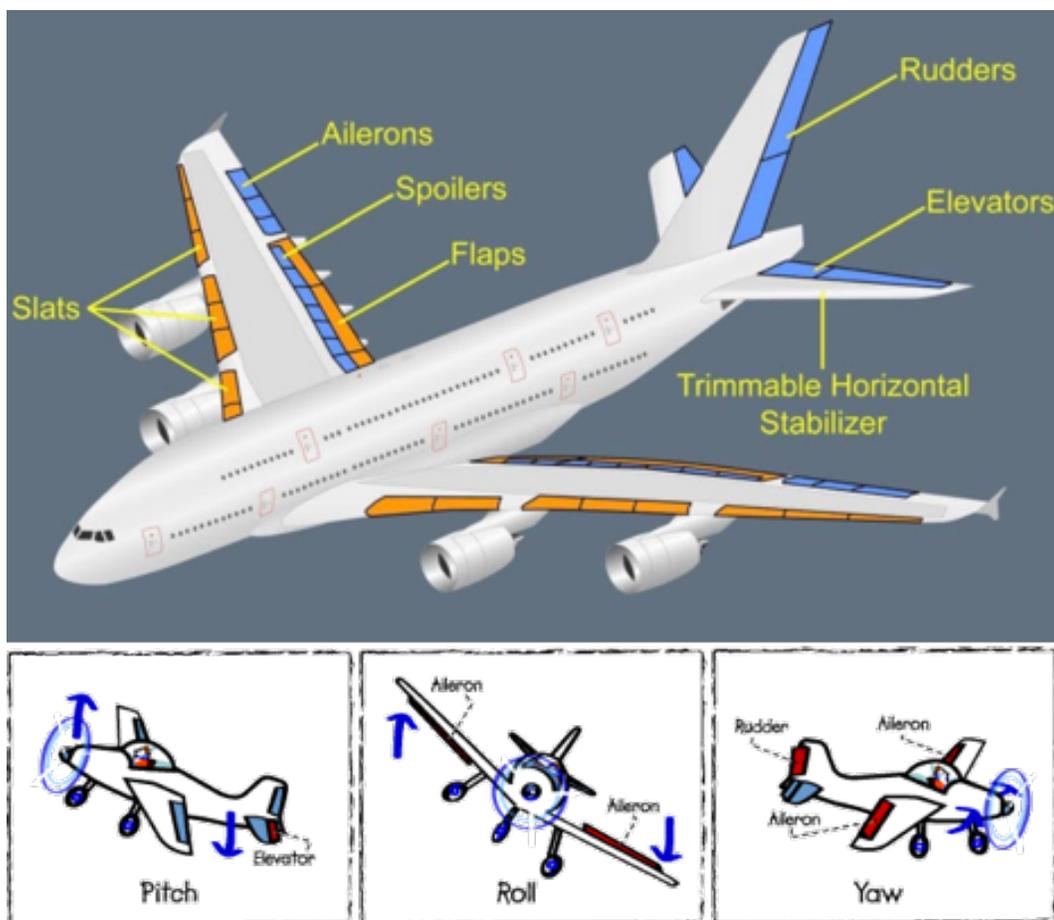

Figure 1. visual illustration of some of control surface and positional variables of FOQA data.

[1] https://en.wikipedia.org/wiki/Final_approach_(aeronautics)
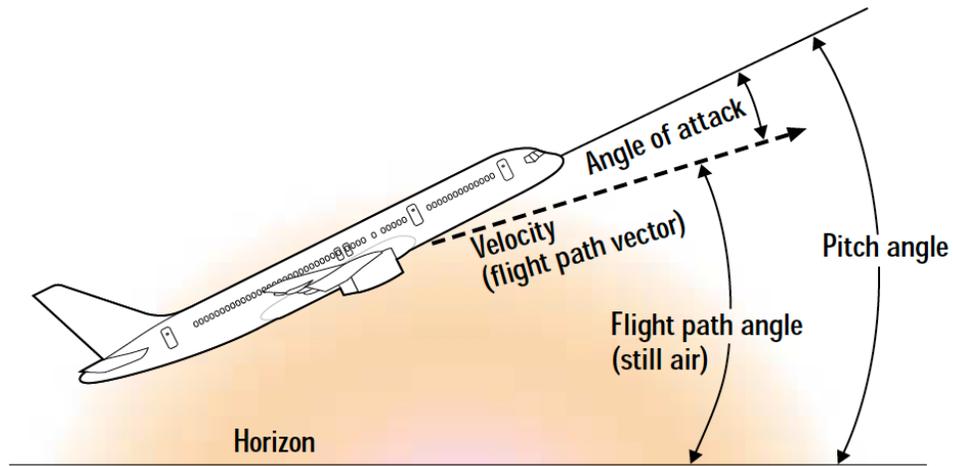[2] https://en.wikipedia.org/wiki/Instrument_landing_system_localizer

Figure 2. visual illustration of some of positional variables of FOQA data.

[1] https://en.wikipedia.org/wiki/Final_approach_(aeronautics)
[2] https://en.wikipedia.org/wiki/Instrument_landing_system_localizer