

Data Process

This paper summarises the data preparatory action and methods developed for the paper.

Trajectory

We tap into OSN data. A trajectory is a series of time-ordered 4D positions, i.e., TIME, LAT, LON, ALT, associated with a FLTID, and some complementary data (e.g. first derivatives, special codes)

Single Flight: Represent each trajectory as a 4D function

$$flight_i \rightarrow T_i(t)$$

$$T_i(t) = (x_i(t), y_i(t), z_i(t), t), t \in [t_{start_i}, t_{end_i}]$$

A **trajectory set** comprises multiple flights, a collection of multiple trajectories

$$\{T_1(t), T_2(t), \dots, T_N(t)\}$$