* *Raw data (OpenSky)*

Structure reference: <https://opensky-network.org/apidoc/python.html>

{

"time": 1551118179,

"states": [

[

1. "e49406", : icao24 - ICAO24 address of the transmitter in hex string representation.
2. "GLO1423 ", : callsign - callsign of the vehicle. Can be None if no callsign has been received.
3. "Brazil", : origin\_country - inferred through the ICAO24 address
4. 1551118179, : time\_position - seconds since epoch of last position report. Can be None if there was no position report received by OpenSky within 15s before.
5. 1551118179, : last\_contact - seconds since epoch of last received message from this transponder
6. -47.5317, : longitude - in ellipsoidal coordinates (WGS-84) and degrees. Can be None
7. -22.6009, : latitude - in ellipsoidal coordinates (WGS-84) and degrees. Can be None
8. 8839.2, : geo\_altitude - geometric altitude in meters. Can be None
9. false, : on\_ground - true if aircraft is on ground (sends ADS-B surface position reports).
10. 213.93, : velocity - over ground in m/s. Can be None if information not present
11. 110.7, : heading - in decimal degrees (0 is north). Can be None if information not present.
12. -5.85, : vertical\_rate - in m/s, incline is positive, decline negative. Can be None if information not present.
13. null, : sensors - serial numbers of sensors which received messages from the vehicle within the validity period of this state vector. Can be None if no filtering for sensor has been requested.
14. 9395.46, : baro\_altitude - barometric altitude in meters. Can be None
15. "5722", : squawk - transponder code aka Squawk. Can be None
16. true, : spi - special purpose indicator
    1. : position\_source - origin of this state’s position: 0 = ADS-B, 1 = ASTERIX, 2 = MLAT, 3 = FLARM

], [], [], [], …

}

* *Information to use (in Geojson format)*

- for pointing : longitude, latitude, name

- for marker popups : callsign, icao24, latitude, longitude, velocity, geo\_altitude, heading

{

"type": "Feature",

"geometry": {

"type": "Point",

"coordinates": [0, 0] (=🡺여기가 longitude, latitude)

},

"properties": {

"name": "null island" (🡺 여기가 name)

}

}

{"type": "Feature","geometry": {"type": "Point","coordinates": [0, 0]},"properties": {"name": "null island"}}