Instrument Development Group

Spray Underwater Glider

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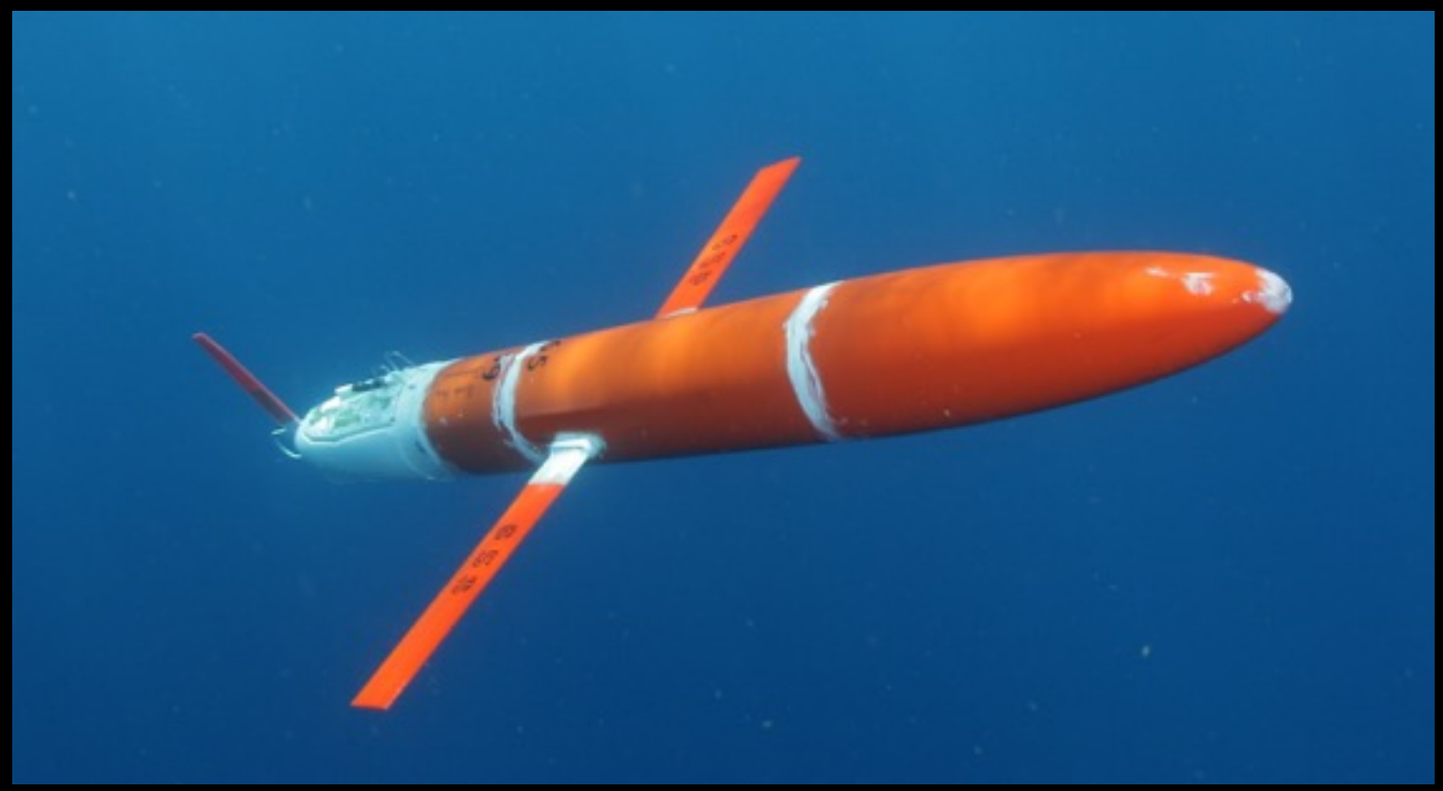
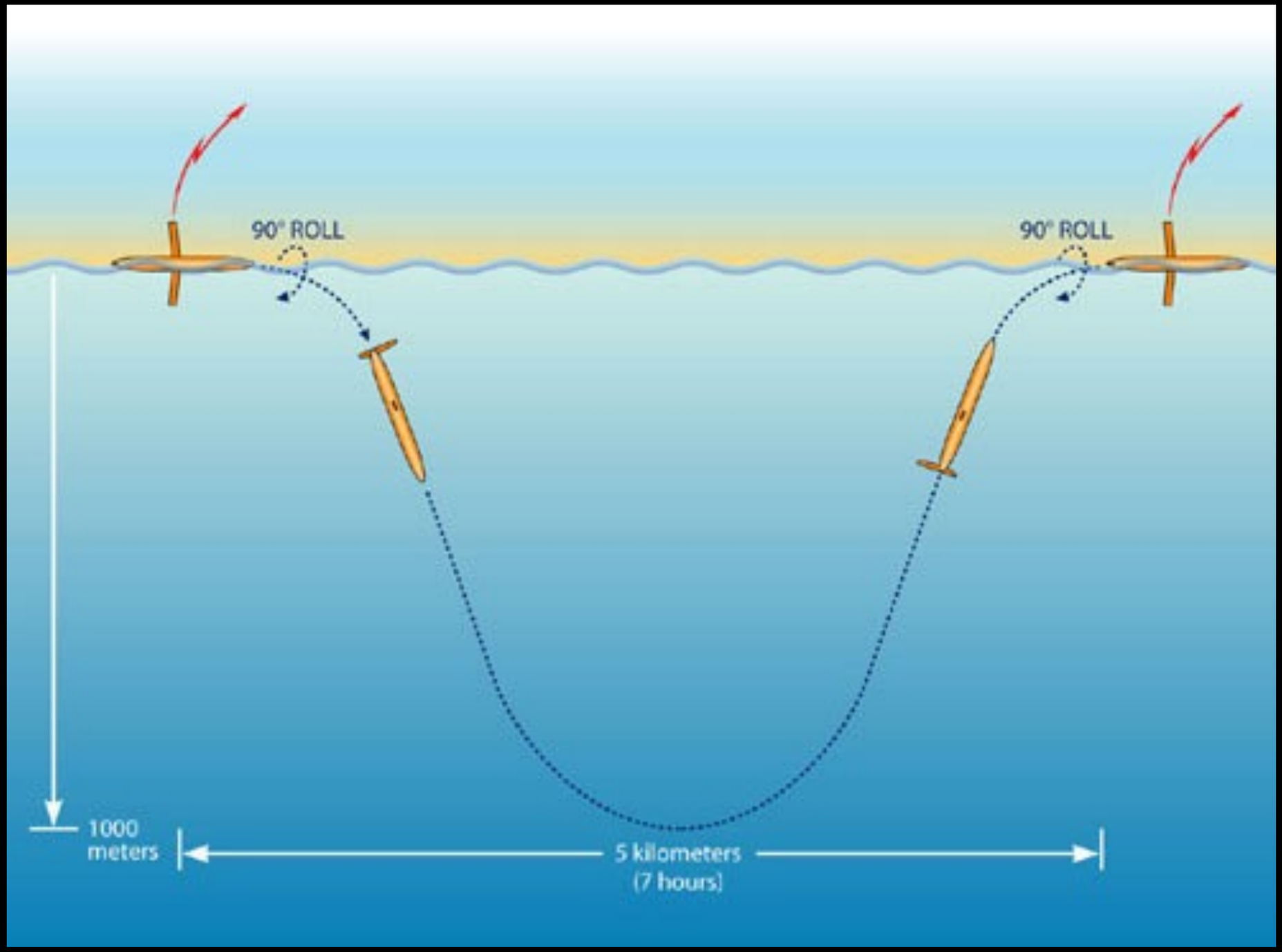
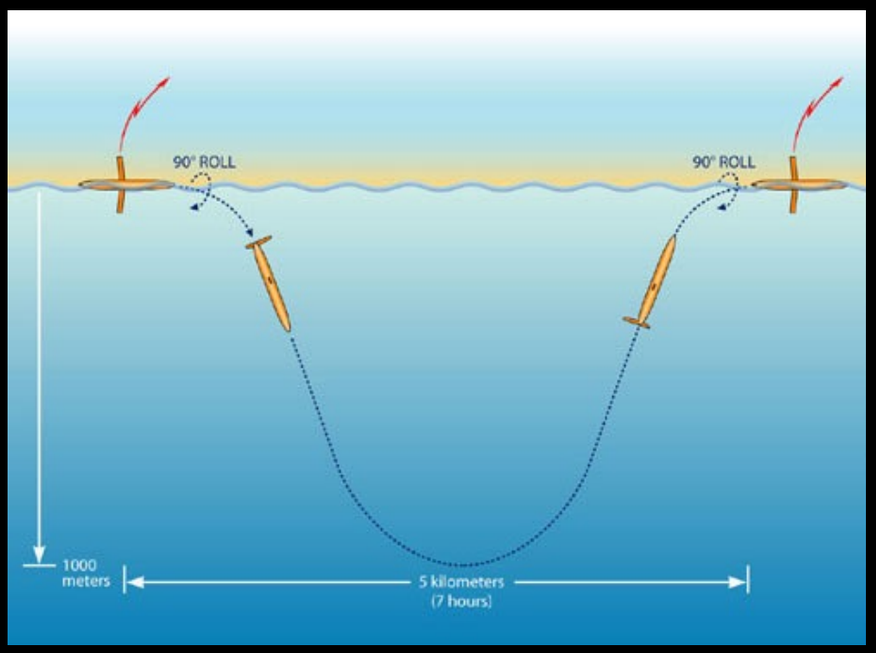
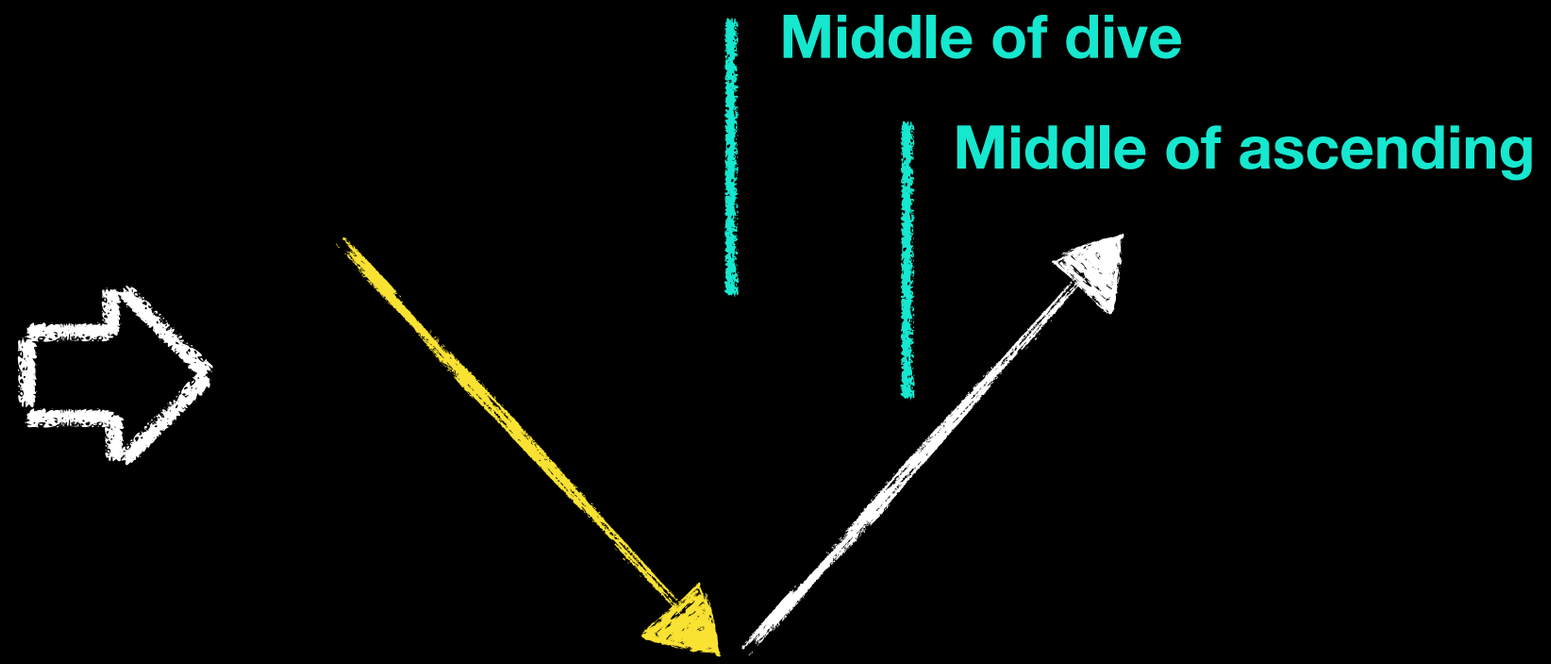


Sampling pattern



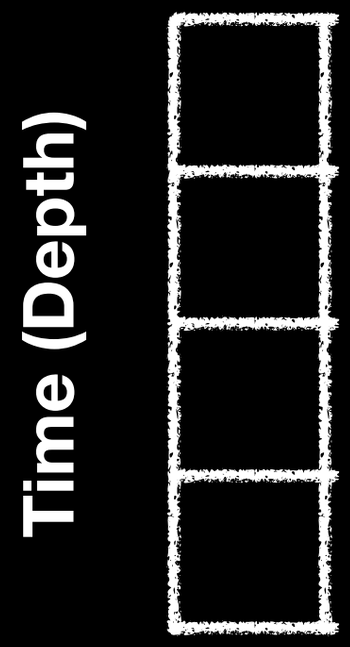
Simple profile



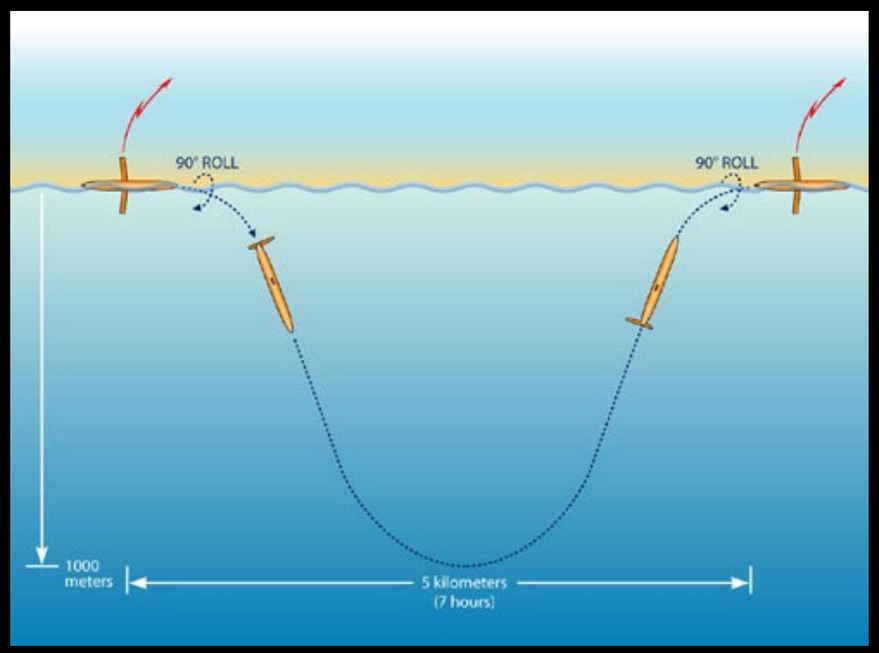


Profile (Lat, Lon, …)

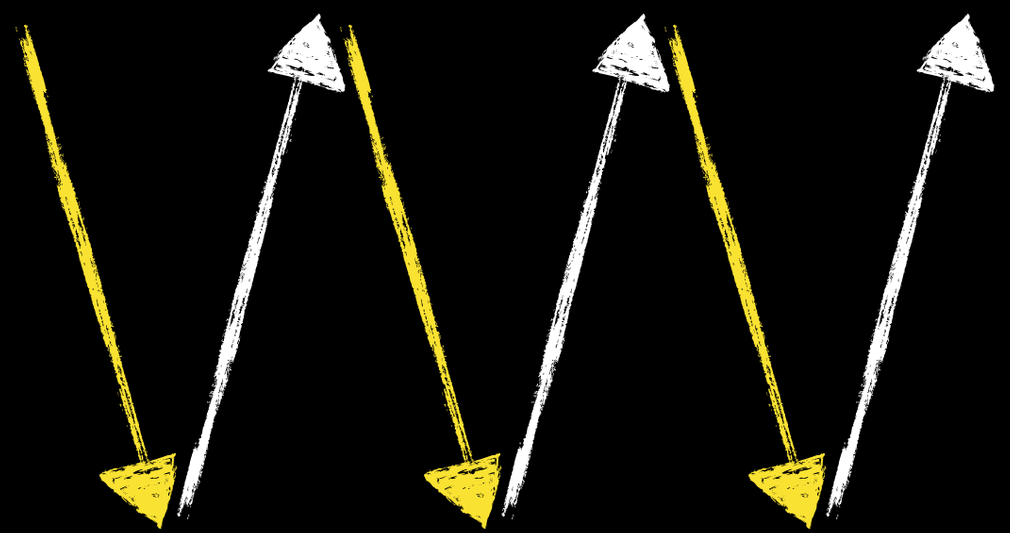
```
dimensions:
        time = 104 ;
        name_strlen = 14 ;
variables:
        char trajectory(name_strlen) ;
        double time(time) ;
        double lat(time) ;
        float temperature(time) ;
        …
```



(single) Trajectory Profile



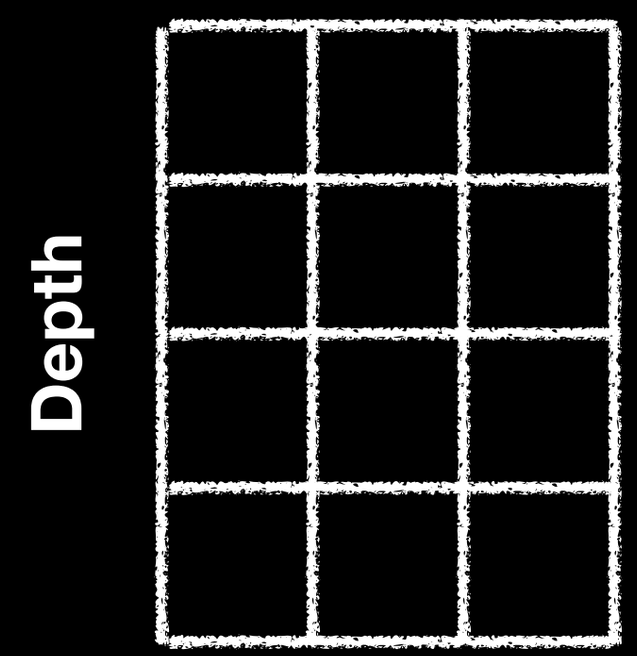
N times



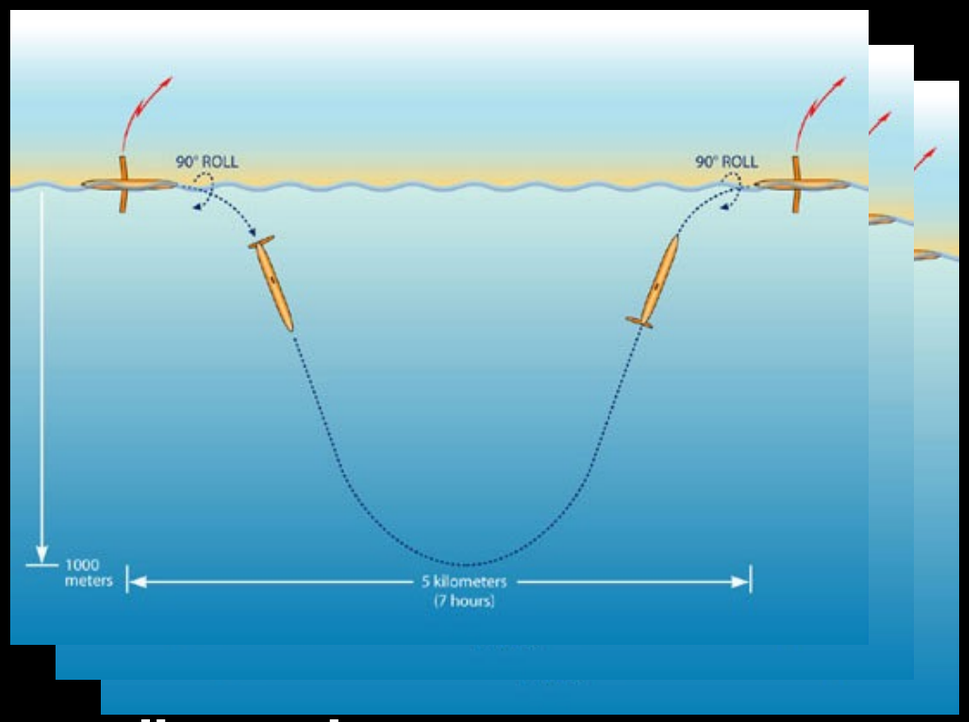
...

```
dimensions:
        depth = 100 ;
        profile = 544 ;
        name_strlen = 8 ;
variables:
        int profile(profile) ;
        char trajectory(name_strlen) ;
        double time(profile) ;
        real depth(profile) ;
        double lat(profile) ;
        float temperature(depth, profile) ;
        …
```

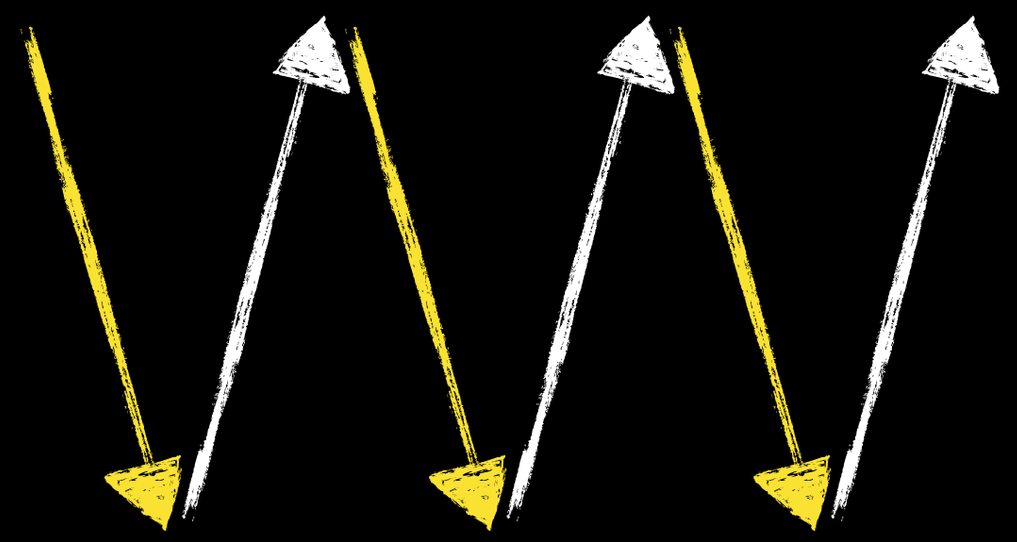
Profile (Time, Lat, Lon, …)



(Ragged) Trajectory Profiles



N times

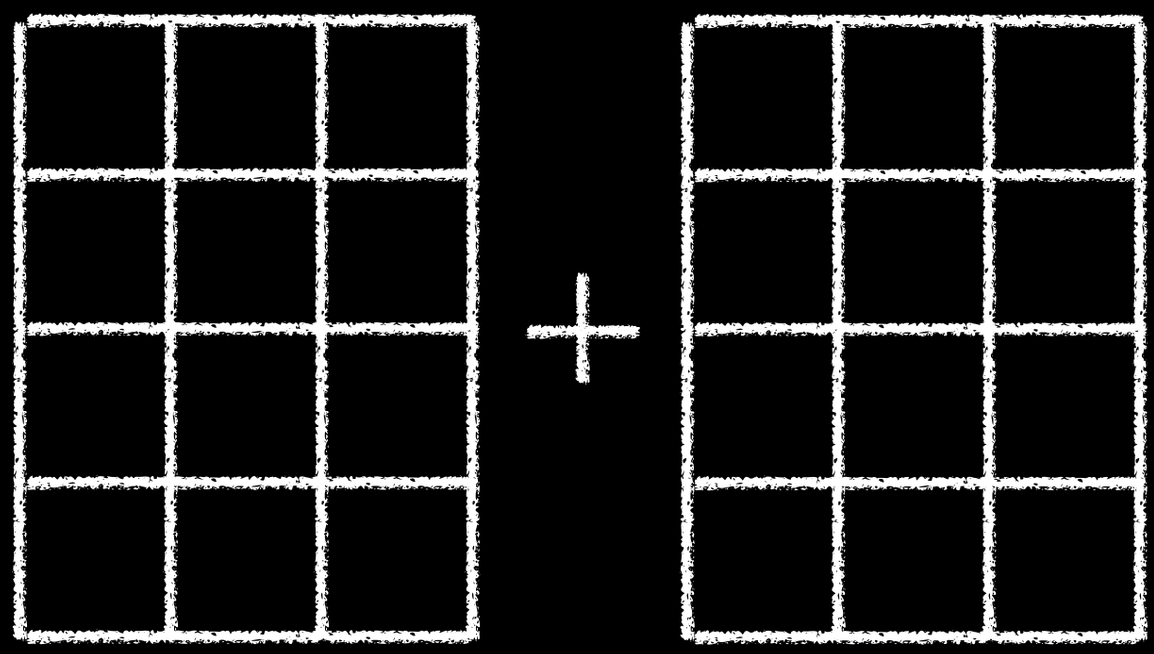


...

```
dimensions:
        depth = 100 ;
        profile = 33031 ;
        name_strlen = 8 ;
        trajectory = 42 ;
variables:
        int profile(profile) ;
        char trajectory(name_strlen) ;
        double time(profile) ;
        real depth(profile) ;
        double lat(profile) ;
        float temperature(depth, profile) ;
```

Profile (Time, Lat, Lon, …)

Depth



How to handle DOIs?

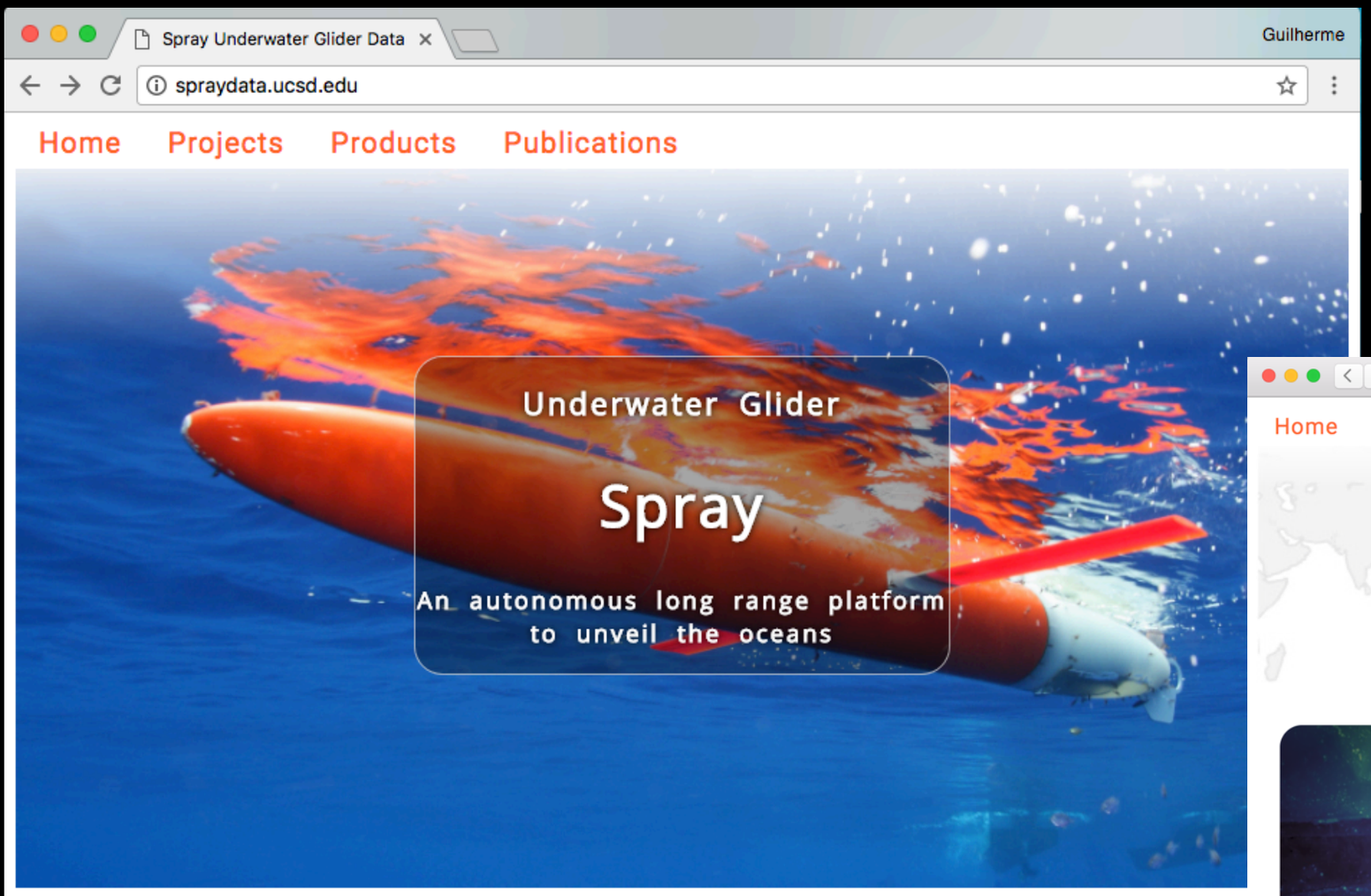
```
// global attributes:
        :Conventions = "CF-1.6, ACDD-1.3" ;
        :title = "California Underwater Glider Network" ;
        …
        :id = "CUGN_line_90_v1" ;
        …
        :doi = "10.21238/S8SPRAY1618" ;
```

- Does CF consider DOI?

- Attribute Convention for Data Discovery (ACDD) recommends field id:

“An identifier for the data set, provided by and unique within its naming authority. The combination of the "naming authority" and the "id" should be **globally unique**, but the id can be globally unique by itself also. IDs can be URLs, URNs, DOIs, meaningful text strings, a local key, or any other unique string of characters. The id should not include white space characters.”

spraydata.ucsd.edu



Underwater gliders are autonomous vehicles that profile vertically by controlling buoyancy and move horizontally on wings. Russ Davis, Jeff Sherman and the Instrument Development Group at Scripps Institution of Oceanography have developed the glider Spray. Spray is 2 m long and weighs 50 kg. It communicates to shore using Iridium, and navigates with GPS. Spray steers by changing its center of mass through the movement of