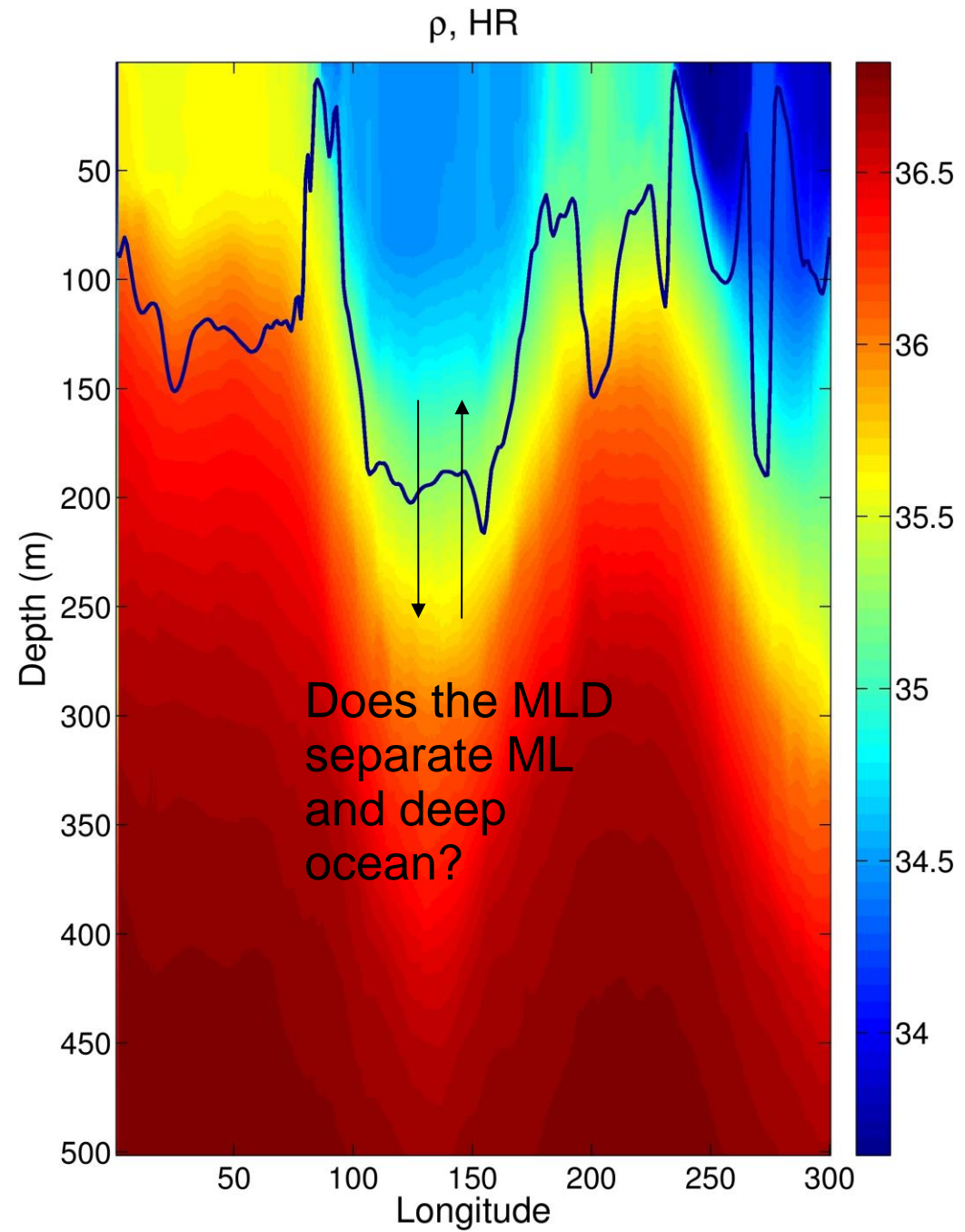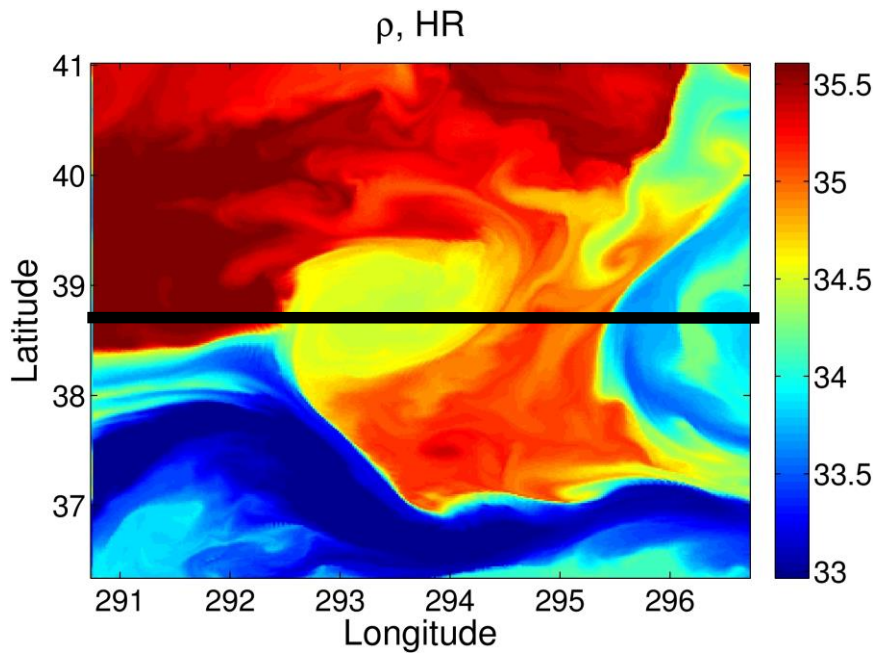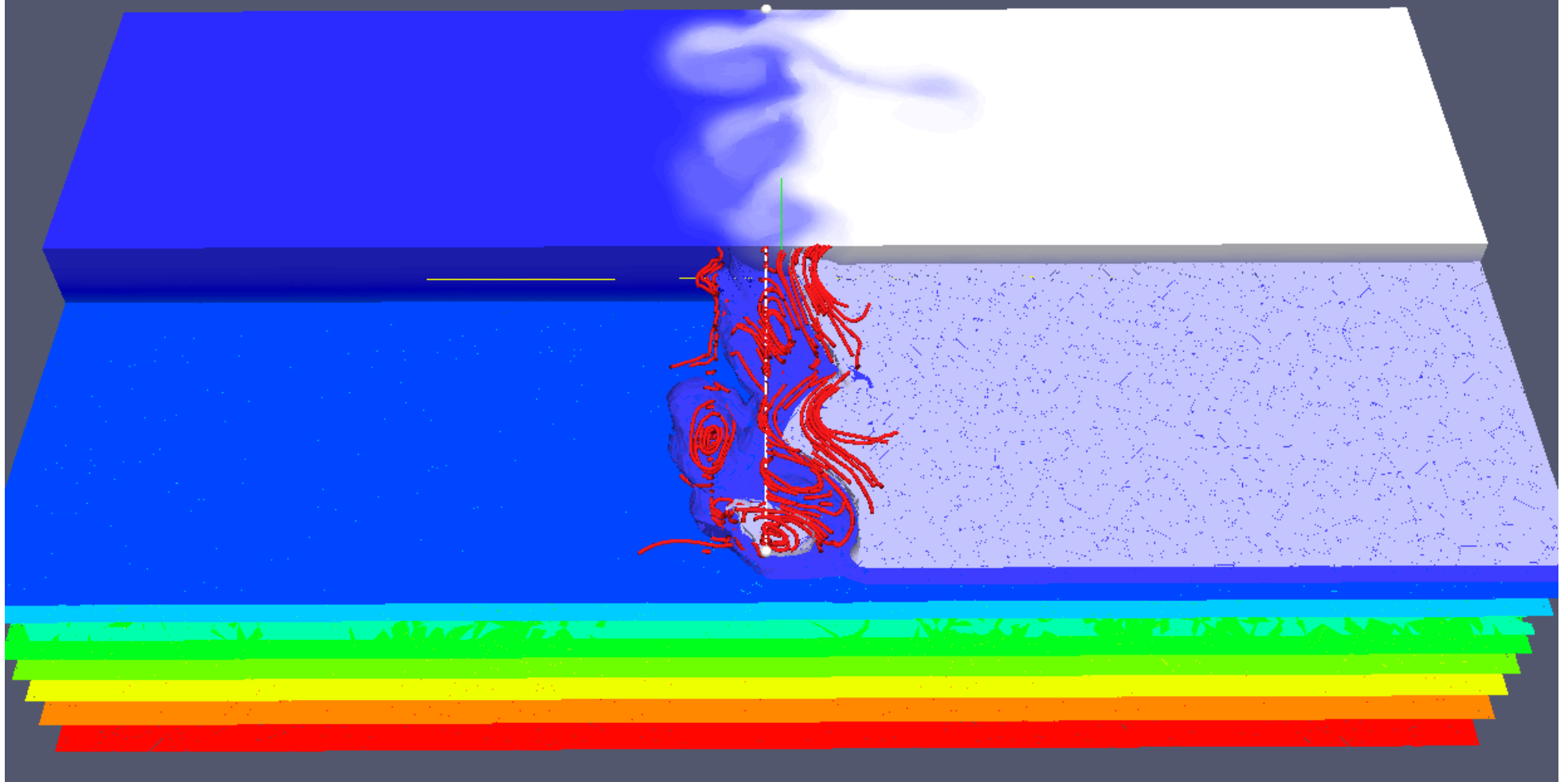# "Real" ocean case

# ML and deep ocean

- Ocean characterized by **submesoscale in the ML** and **mesoscale in ML and below**;

- Meso/submesoscale features affect **vertical transport**

- **Is the ML a separate domain respect to the deep ocean?**

ρ, HR

Does the MLD separate ML and deep ocean?

ρ, HR

# ML as barrier for transport

- We consider an idealized mixed layer
- Particles are released everywhere in the domain
- Particles they don't cross the ML

# ML as barrier for transport



Vertical FSLE shows the presence of a region with strong separation confined in the ML