





- **instant t**

ds

s





















































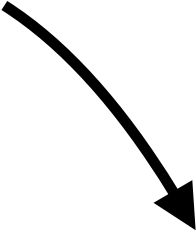








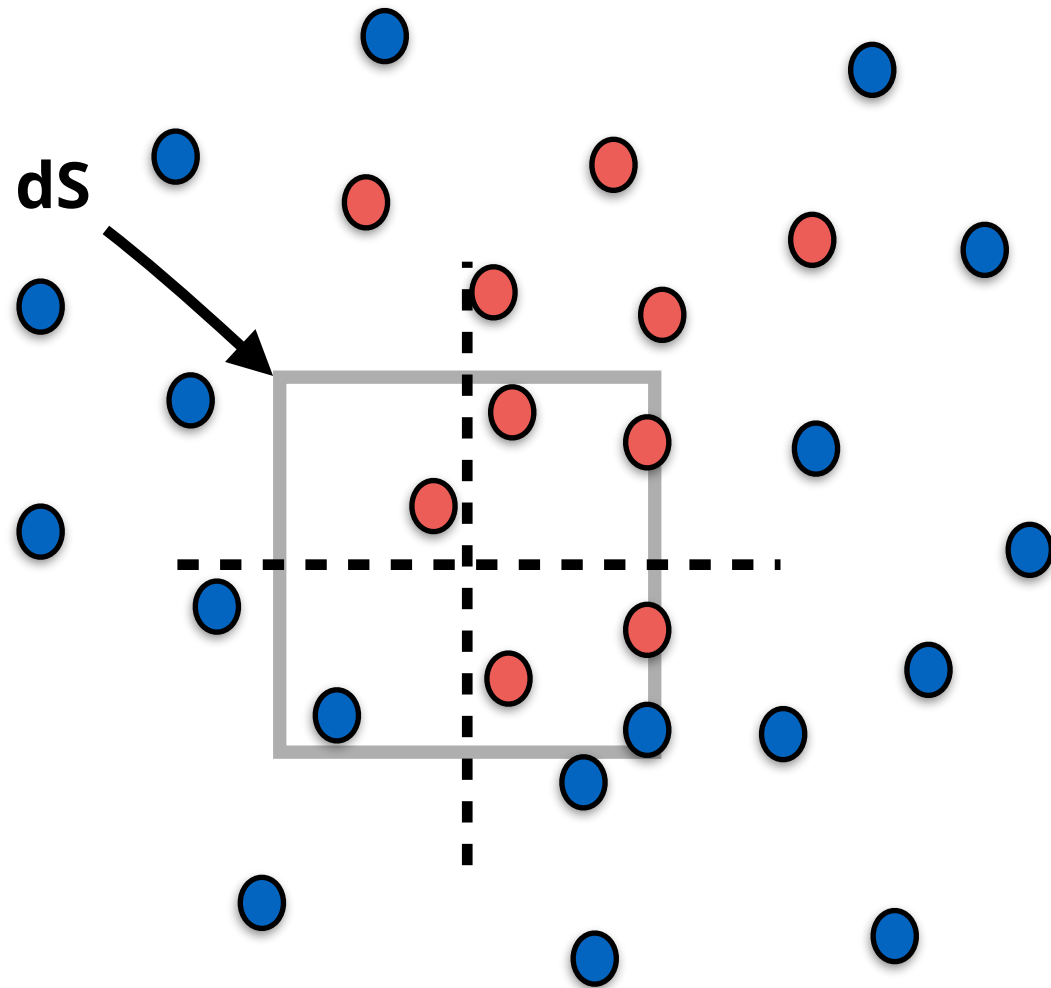




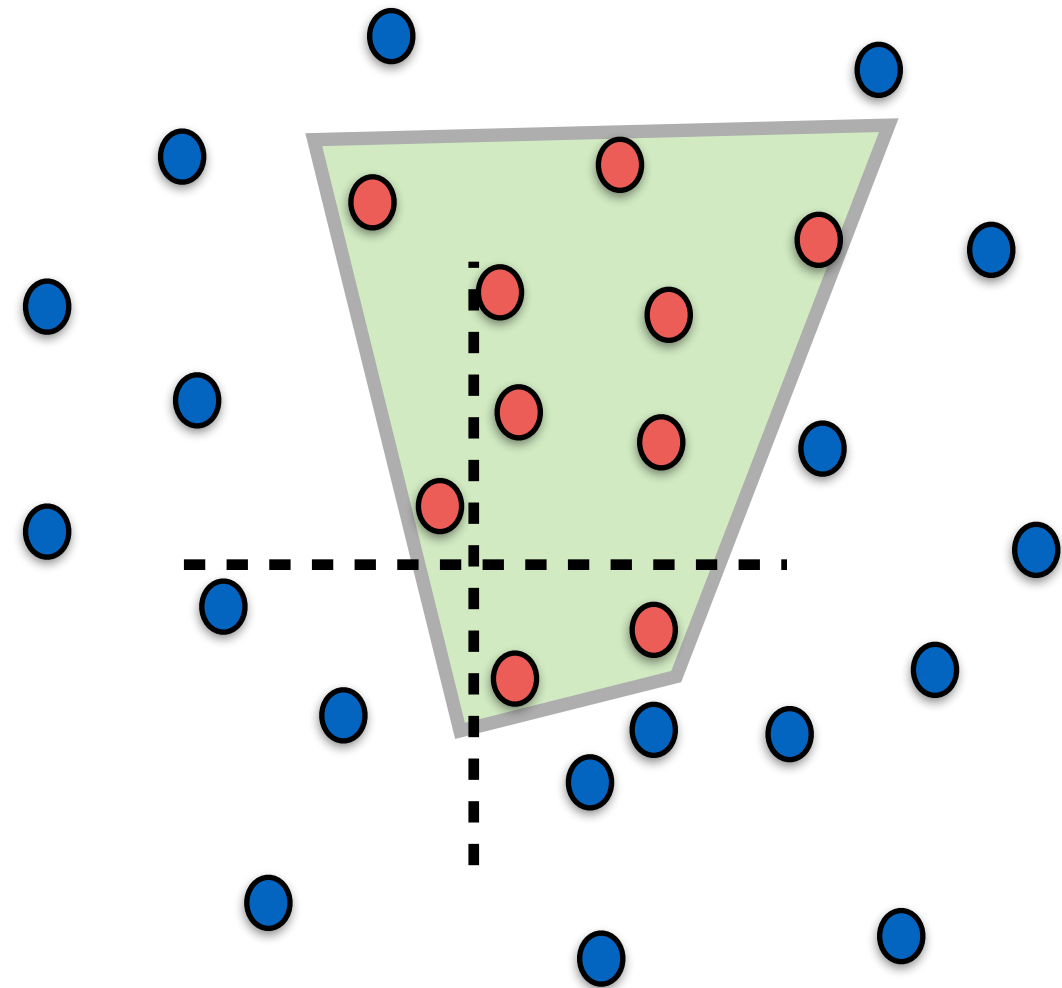
**School of Geosciences**

Eulerian vs Lagrangian approach

● instant  $t+dt$



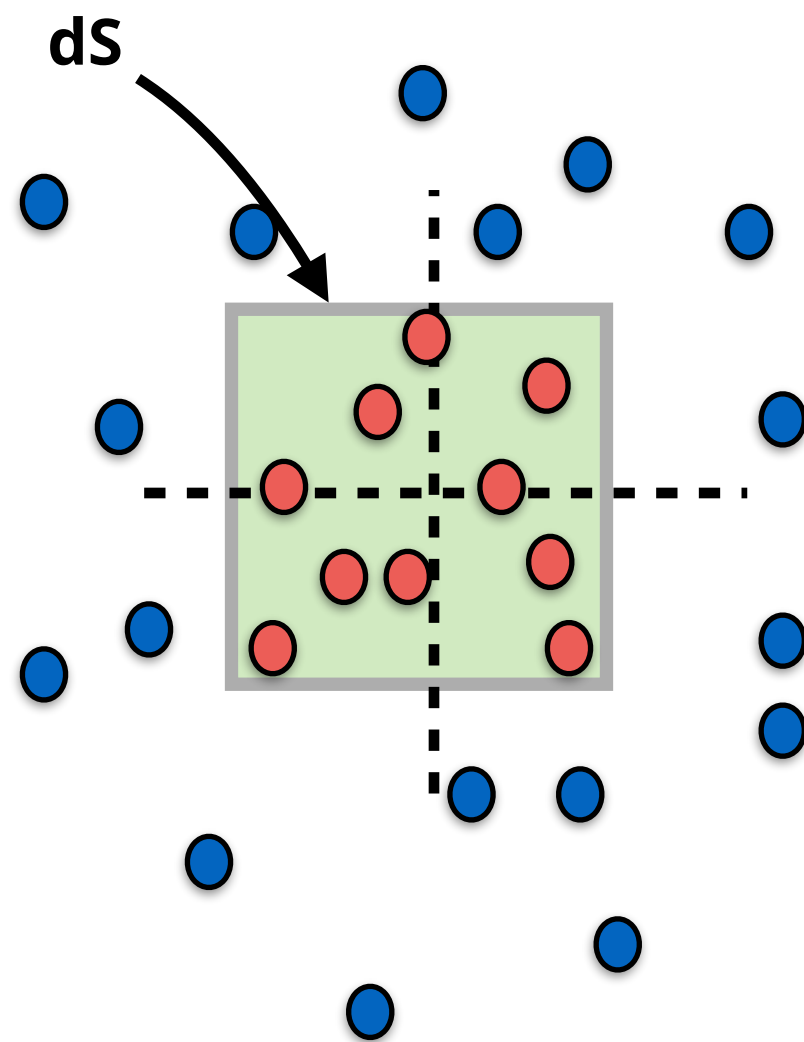
Eulerian: Evolution of a quantity inside a fixed box



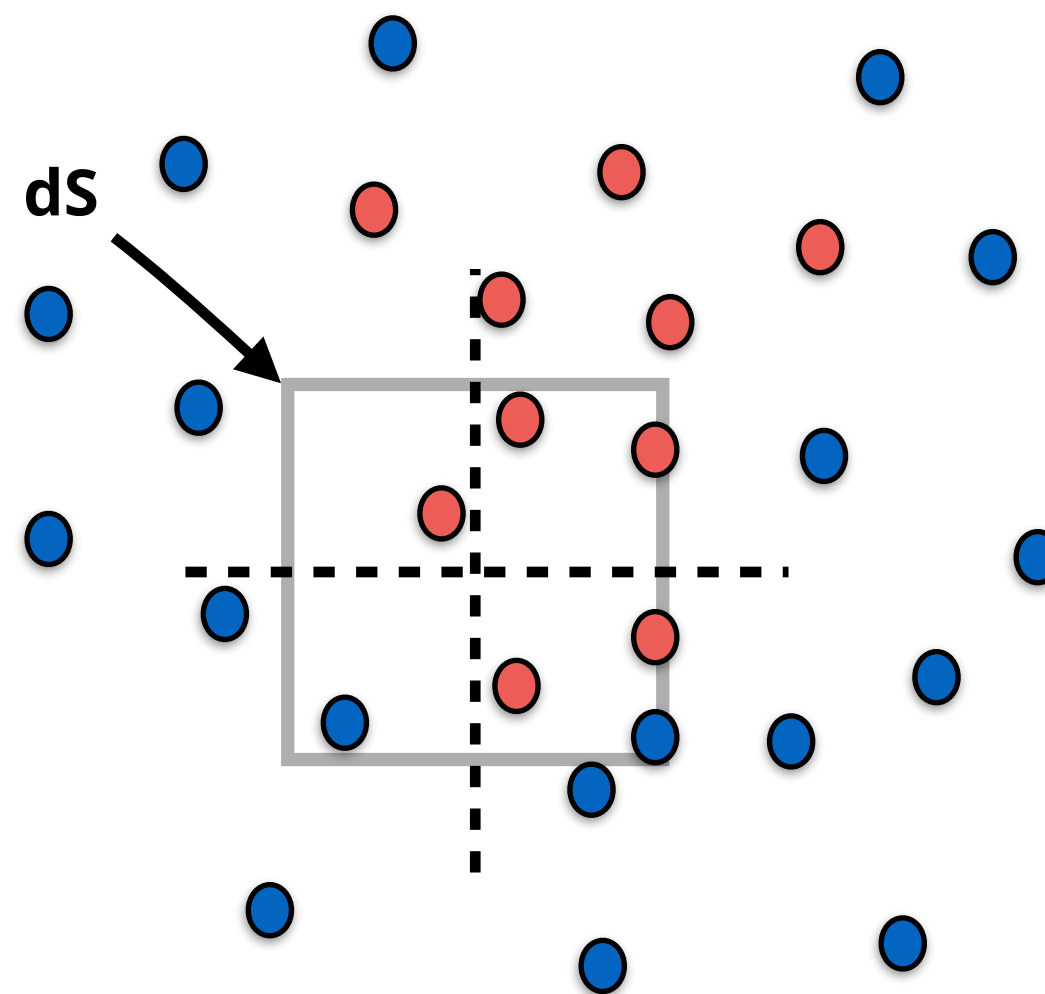
Lagrangian: Evolution of a quantity following the particles in their motion

# Eulerian vs Lagrangian approach

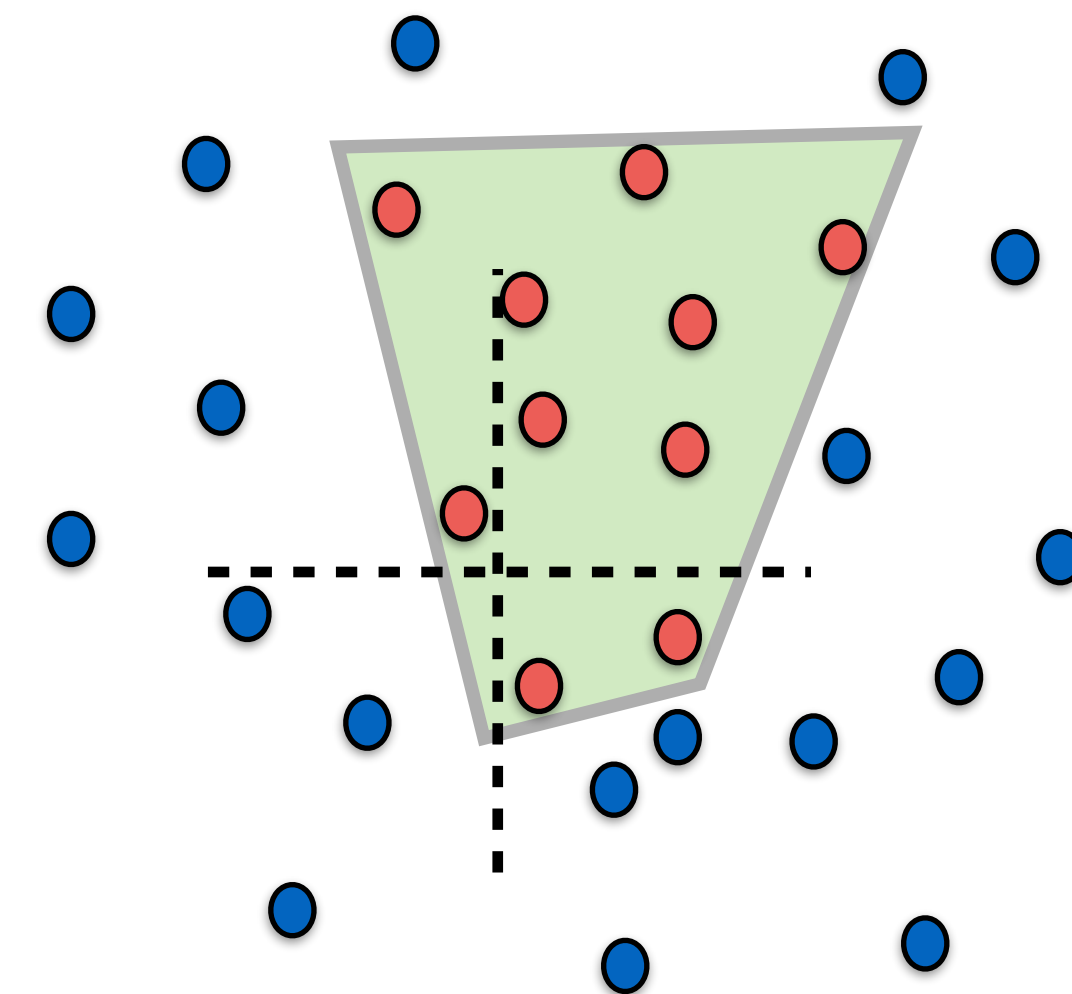
● instant  $t$



● instant  $t+dt$



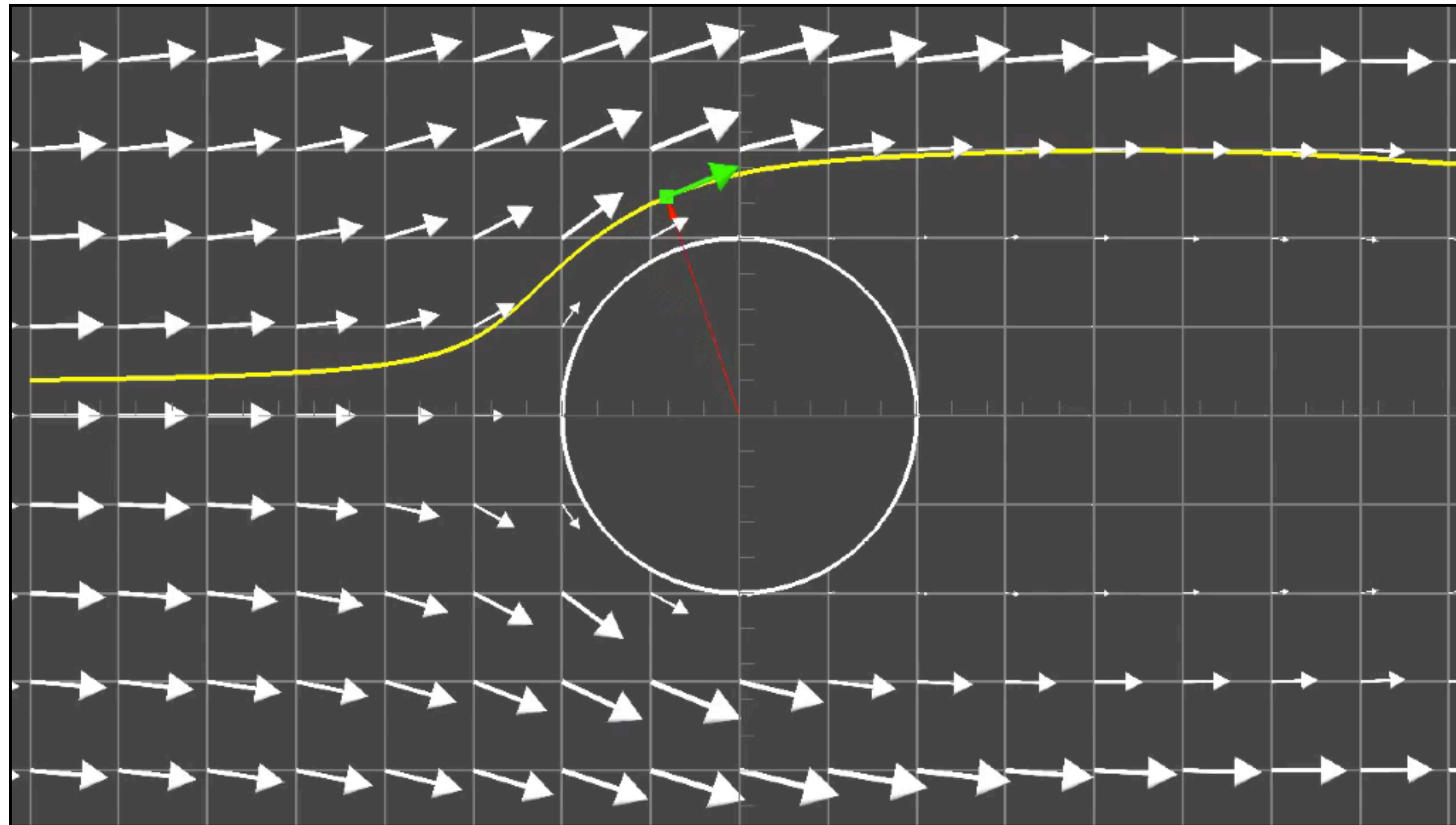
Eulerian: Evolution of a quantity inside a fixed box



Lagrangian: Evolution of a quantity following the particles in their motion

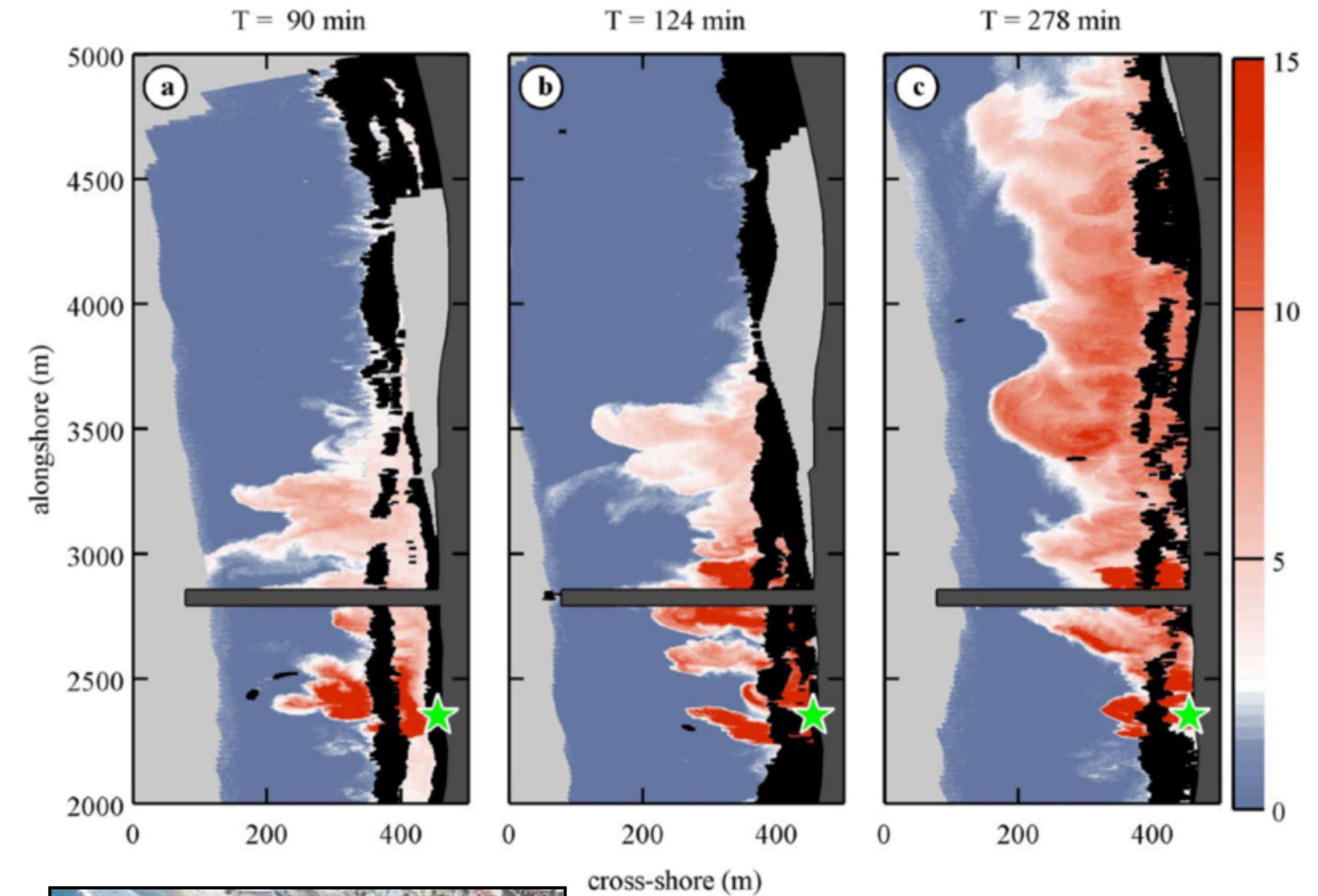


# Eulerian vs Lagrangian approach



Particle pathline and velocity vector overlaid on the Eulerian vector description of the steady flow field around a circular cylinder ( $Re=40$ ).

(Simulations with YAFFA Postprocessing with Paraview Tommi Mikkola)



Photographs of non-toxic fluorescent dye tracer (pink water) one hour after continual surfzone dye release at Imperial Beach California  
(Clark et al. 2014)