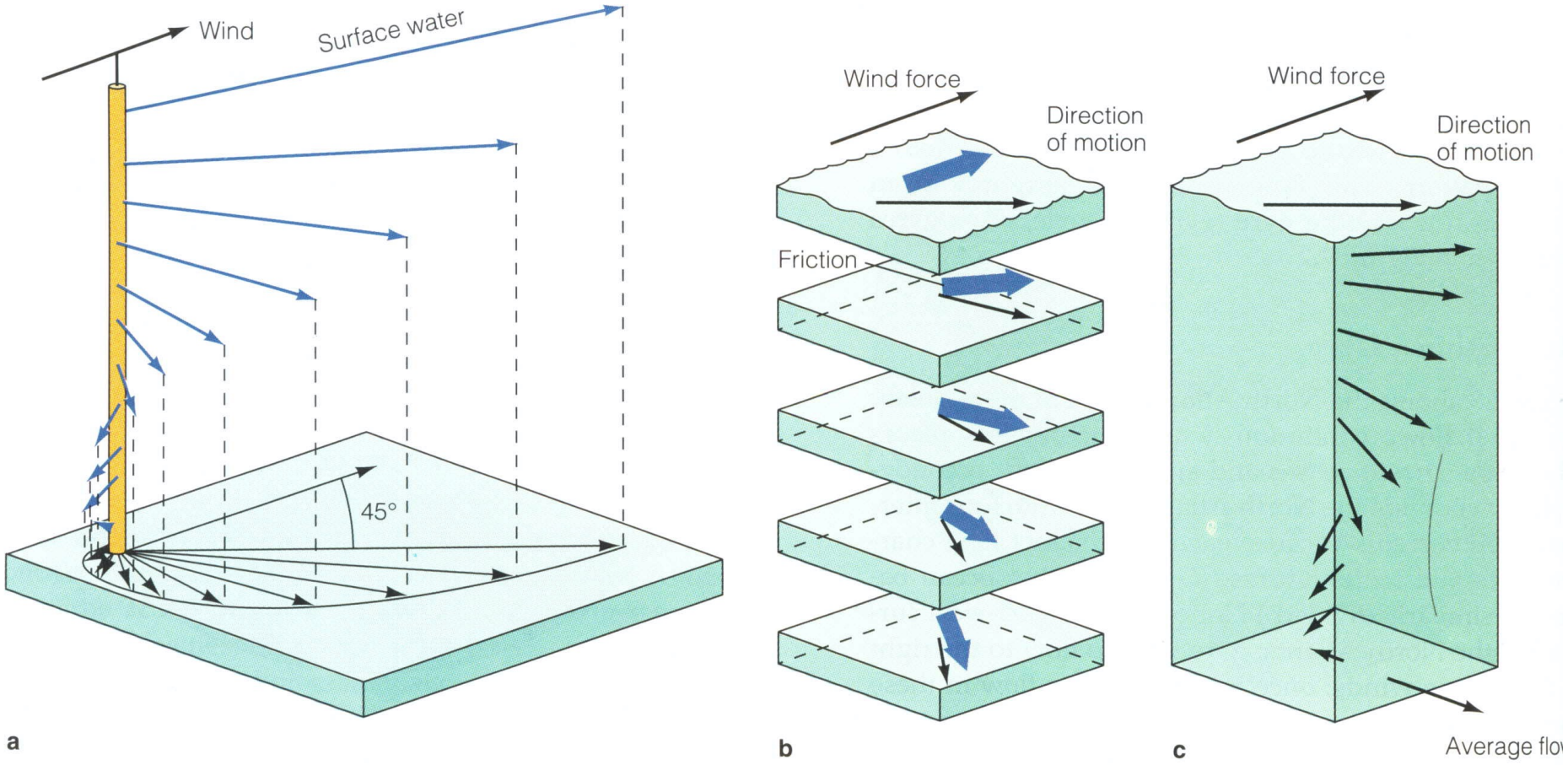
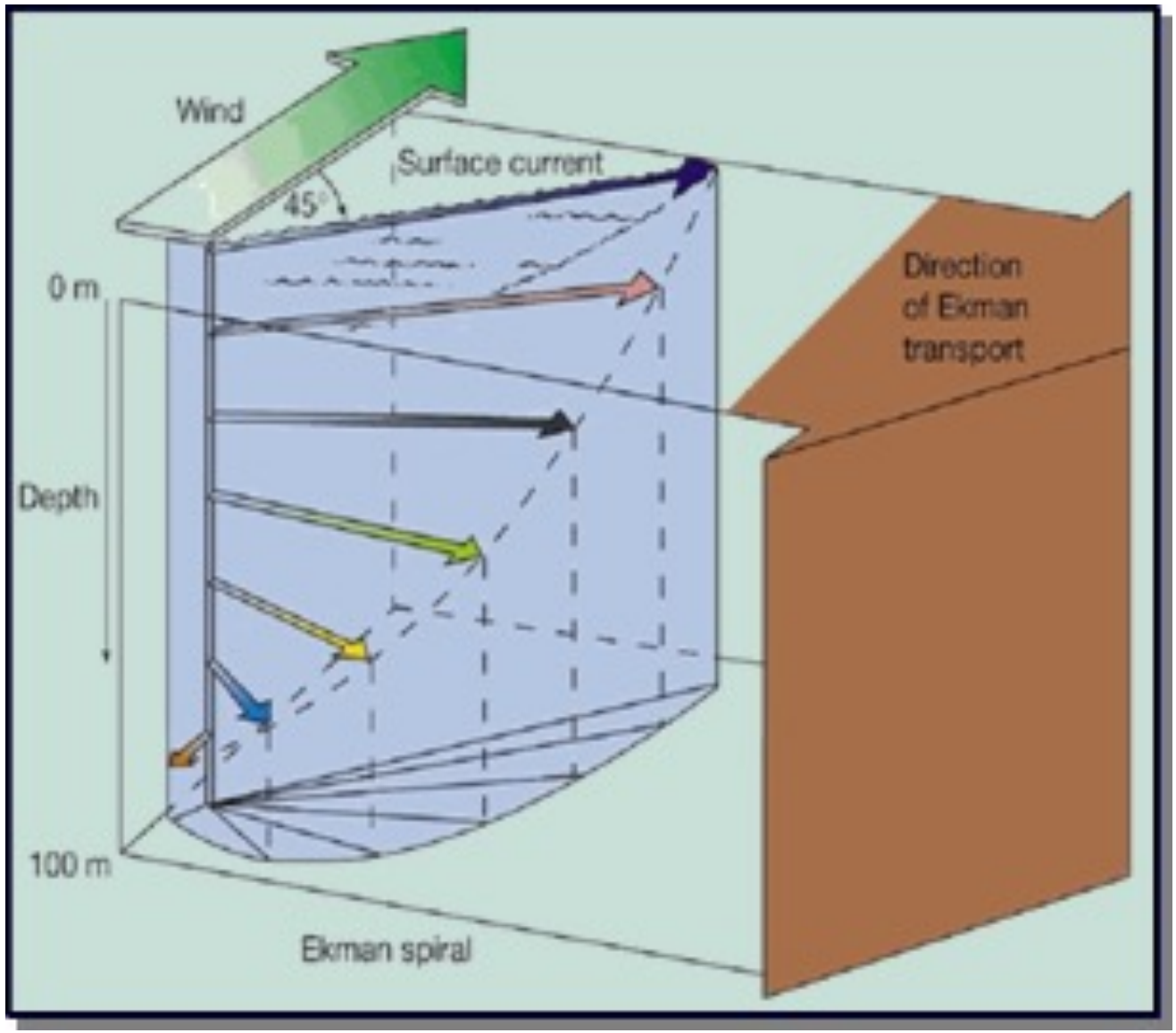
Frictional Shearing Stress + Rotation: Ekman Spiral



Frictional Shearing Stress + Rotation: Mass Transport:



http://secoora.org

Shearing Stress
+
Rotation
+
Time Dependence:

Observations

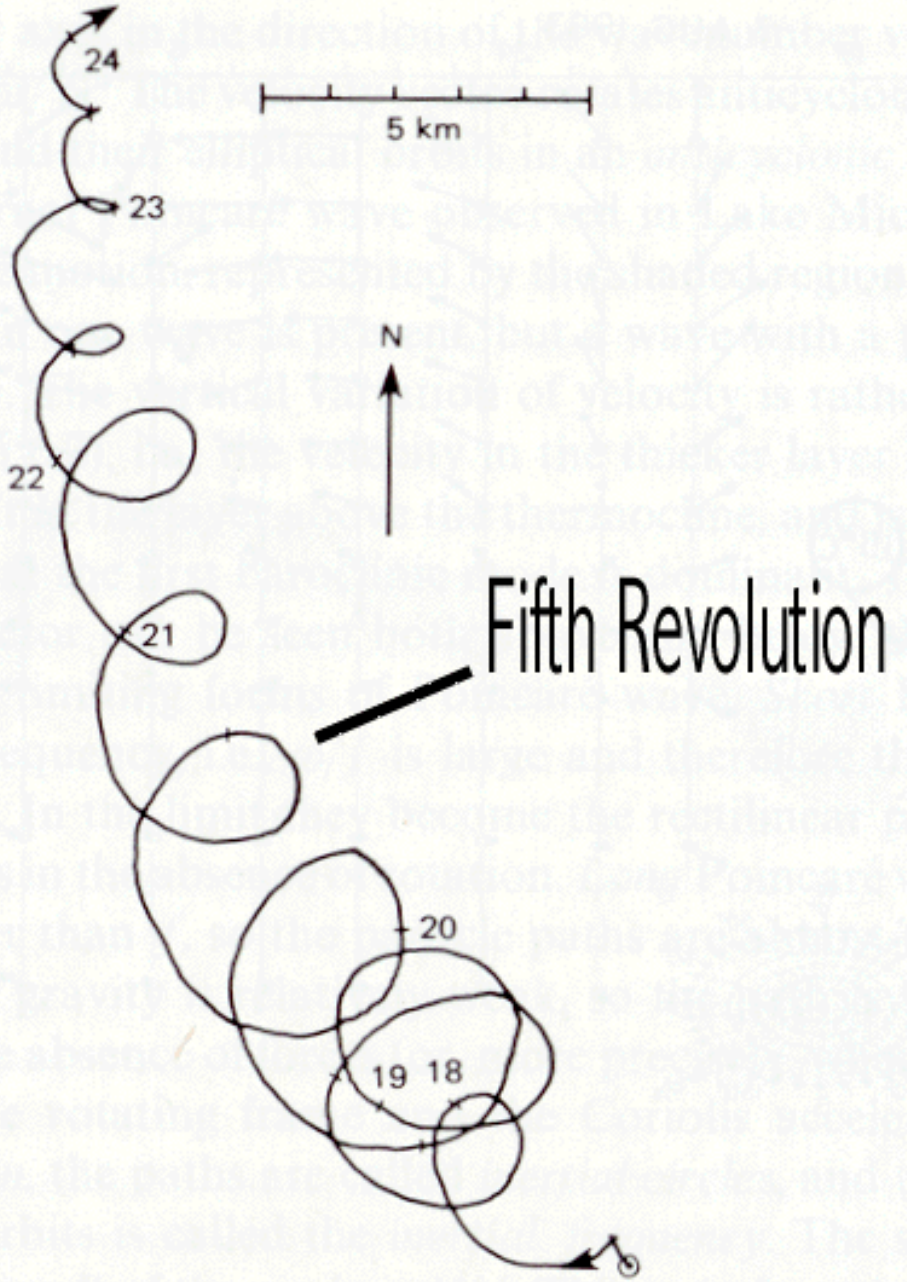
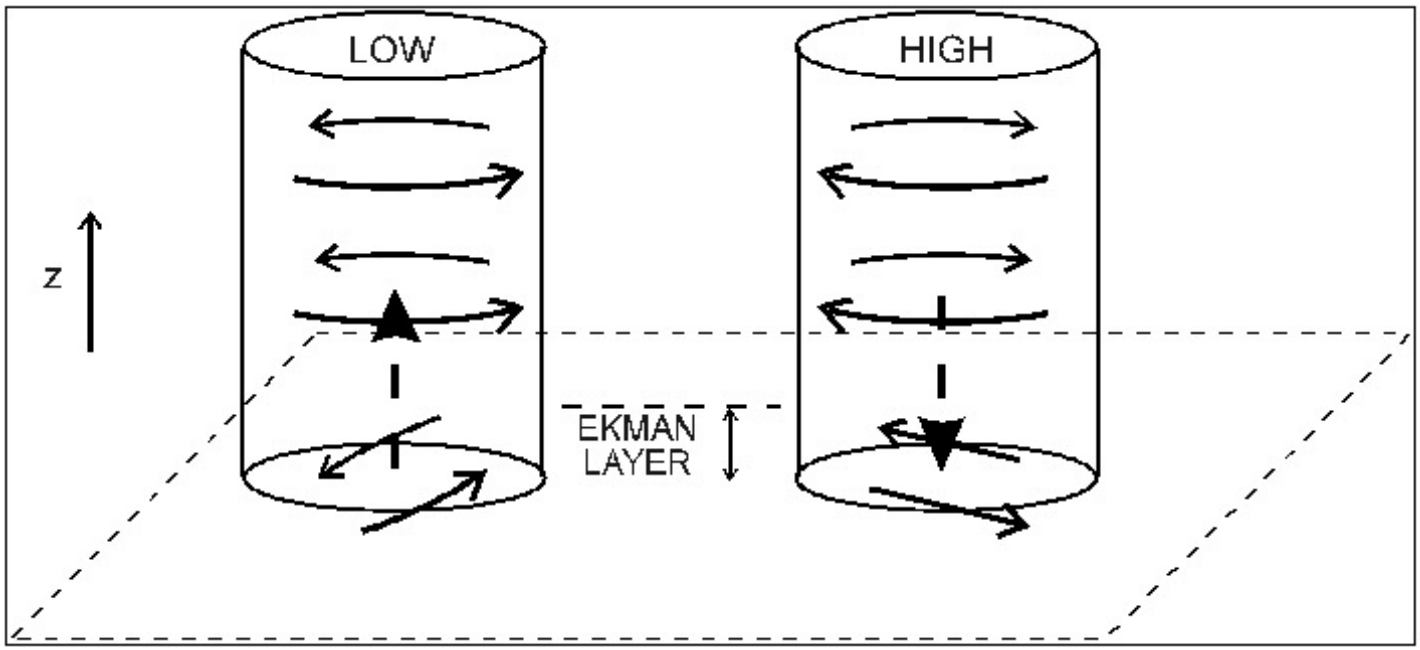


Fig. 8.3. The historic current measurements in the Baltic by Gustafson and Kullenberg (1936), showing oscillations of near-inertial period. The plot is a progressive vector diagram, showing the displacement a particle would have, given the velocity observed at the current meter.

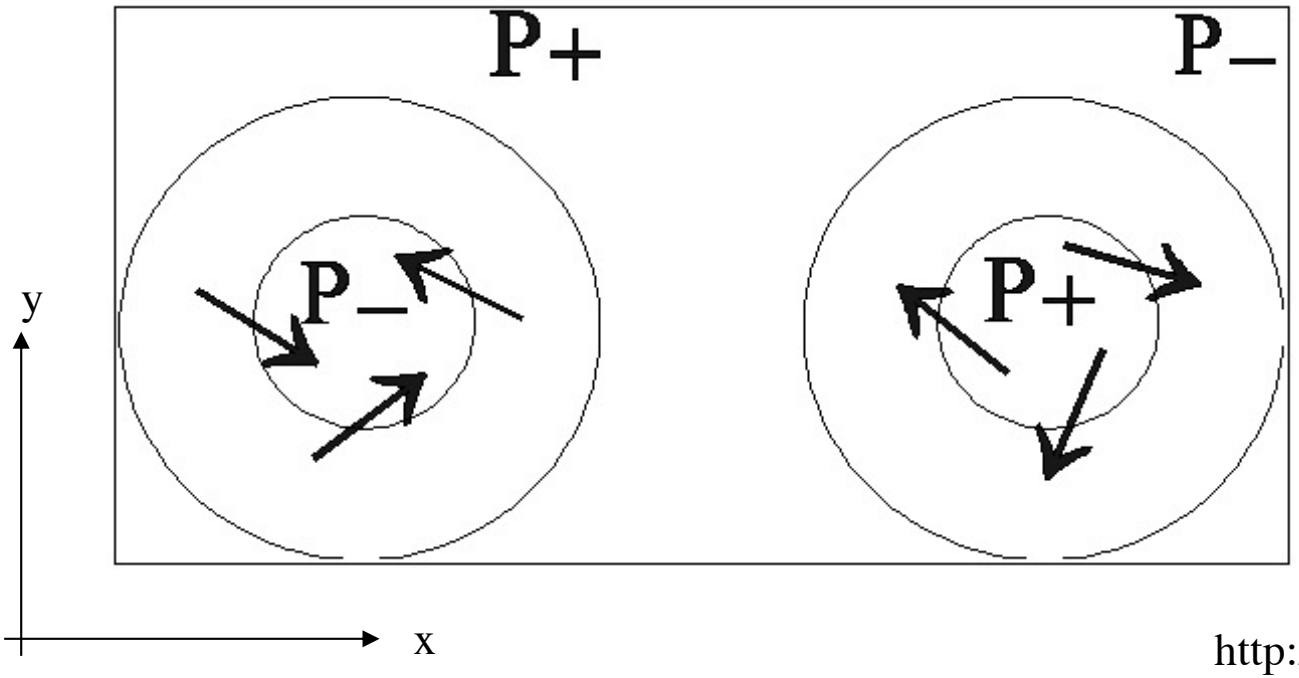
Adapted from Gill (1982)

cyclonic anti-cyclonic



geostrophic circulation with relative vorticity

leads to



frictional boundary layer flow from high to low pressure

➔ divergence!!!
➔ vertical velocity

http://paoc.mit.edu/labweb/lab9/gfd_9.htm