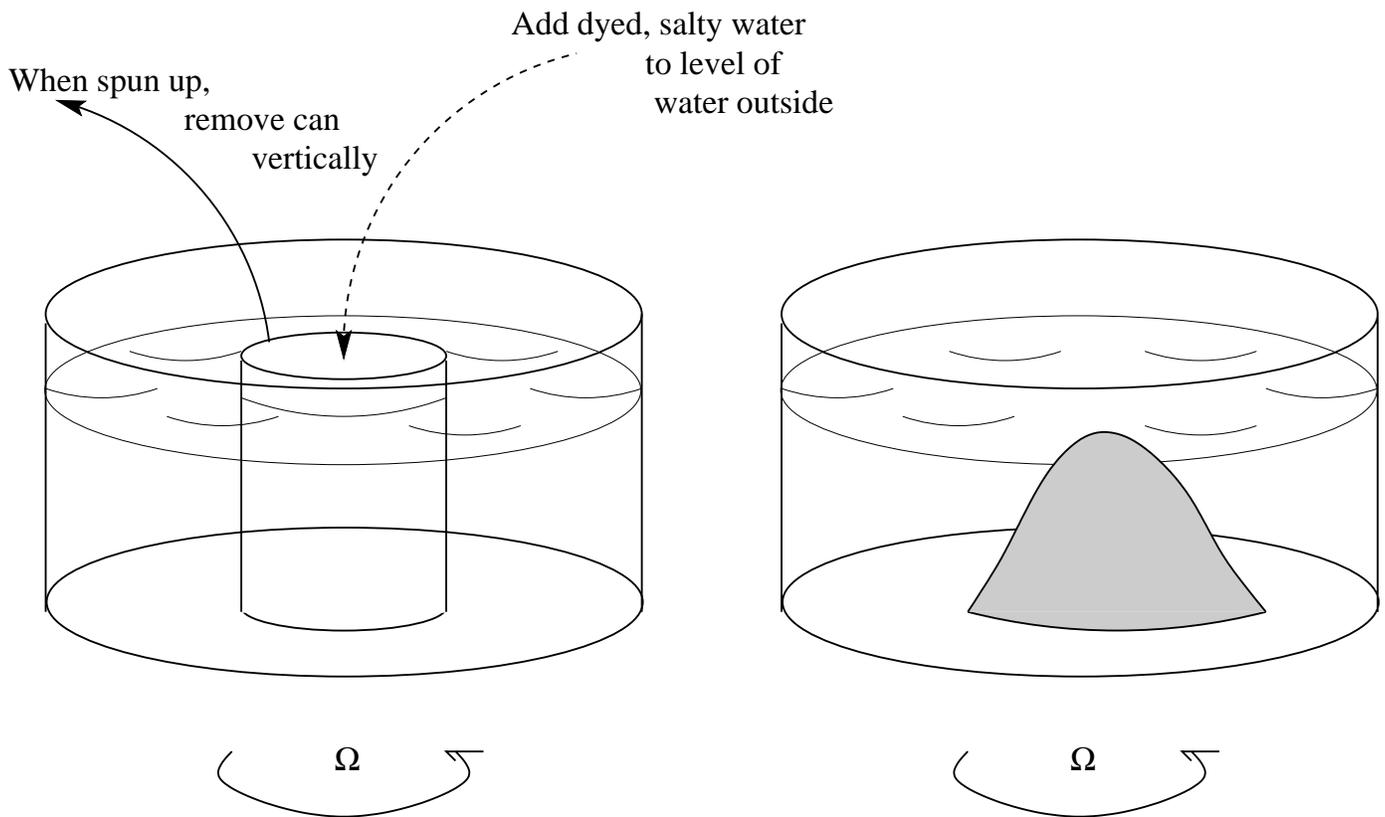


## 12.804 — Geostrophic adjustment — tank experiments

In the rotating tank, we will attempt to examine the geostrophic adjustment problem by releasing a cylinder of fluid which is denser or lighter than its surroundings while the tank is rotating. To set this up, you need to figure out what kind of density difference is needed to make a deformation radius on the order of 10 *cm*. The fluid in the tank will be about 10–20 *cm* deep. Rotation rate is up to 10 *rpm*. How much salt do you need to add per amount of water to get a reasonable  $g'$ ?

### Things to do:

Estimate the slope of the interface you expect to see. Compare with observations. Estimate the swirl speed.



Sketch of apparatus

MIT OpenCourseWare  
<http://ocw.mit.edu>

12.804 Large-scale Flow Dynamics Lab  
Fall 2009

For information about citing these materials or our Terms of Use, visit: <http://ocw.mit.edu/terms>.