

Question title: Boussinesq Equations

The Boussinesq approximation is a useful approximation to the full Navier-Stokes plus salinity and thermodynamics discussed in class that is appropriate for most oceanographic uses.

True False

Question title: Ekman Layer

The Ekman layer is the fundamental method by which wind stresses are communicated to slow timescale ocean motions.

True False

Question title: f-plane and beta-plane

The f-plane and beta-plane are approximations to the spherical earth that are valid only near the equator.

True False

Question title: f-plane and beta-plane 2

The f-plane and beta-plane are approximations to the spherical earth that are valid only near the reference latitude about which the tangent plane is formed.

True False

Question title: Moving Centrifugal

There is no centrifugal force on a body that is not moving in the rotating frame of reference.

True False

Question title: Moving Coriolis

There is no Coriolis force on a body that is not moving in the rotating frame of reference.

True False

Question title: Rotating Momentum

The momentum equations gain extra terms in a rotating coordinate frame.

True False

Question title: Rotating Tracers

The tracer equations gain extra terms in a rotating coordinate frame.

True False

Question title: Useful approximations

Which of the following are approximations useful in oceanography (select as many as needed)

- 1. Hydrostatic Approximation
- 2. Boussinesq Approximation
- 3. Geostrophic Approximation
- 4. Thermal Wind Balance Approximation

Question title: Which are rotating forces?

Select from the following list the 'forces' that result from using a rotating coordinate frame:
(multiple answers)

- 1. Coriolis Force
- 2. Centrifugal Force
- 3. Gravity
- 4. Friction
- 5. Tidal forces