

Basic equations of fluid statics

[Science](#), [Physics](#)



the gravity is aligned with one of the co-ordinate axis, for example z- axis, then The component equations are
reduced to L -7. 9

Under this assumption, the pressure P depends on z only. Therefore, total derivative can be used instead of the partial derivative.

L - 7. 10 ||||| This simplification is valid under the following restrictions a. Static fluid b. Gravity is the only body force. c. The z-axis is vertical and upward. |||