Hydrostatics

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1 Hydrostatic pressure

[1]

2 Buoyancy

[1]

3 Equilibria of floating bodies

[1]

4 Rotational hydrostatics

[1] Consider the equilibrium of an incompressible fluid that is uniformly rotating at a fixed angular velocity $\boldsymbol{\omega}$ in some inertial frame of reference. Such a fluid appears stationary in a non-inertial, co-rotating reference frame.

5 Equilibrium of a rotating liquid body

[1]

6 Maclaurin spheroids

[1] The constraint (2.115) can be satisfied is if $a_2 = a_1$, i.e. if the planet is rotationally symmetric about its axis of rotation. An ellipsoid that is rotationally symmetric about a principal axis - or, equivalently, an ellipsoid with two equal principal radii - is known as a spheroid.

7 Jacobi ellipsoids

[1]

8 Roche ellipsoids

[1]

References

[1] Richard Fitzpatrick. *Theoretical Fluid Mechanics*. 2053-2563. IOP Publishing, 2017.