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SOME CLASSES OF SHAPES OF THE ROTATING LIQUID DROP

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Abstract. The problem of a fluid body rotating with a constant angular velocity and subjected to uniform external pressure is of real interest in both fluid dynamics and nuclear theory. Besides, from the geometrical viewpoint the sought equilibrium configuration of such system turns out to be equivalent to the problem of determining the surface of revolution with a prescribed mean curvature. In the simply connected case, the equilibrium surface can be parameterized explicitly via elliptic integrals of the first and second kind.

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Contents

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