STATIONARY ROTATING SURFACES IN EUCLIDEAN SPACE

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Resumo. A stationary rotating surface is a compact surface in Euclidean space whose mean curvature H at each point x satisfies $2H(x) = ar^2 + b$, where $r(x)$ is the distance from x to a fixed straight-line L, and a and b are constants. These surfaces are solutions of a variational problem that describes the shape of a drop of an incompressible fluid in equilibrium by the action of surface tension when it rotates about L with constant angular velocity. The effect of gravity is neglected. In this talk we study the geometric configurations of such surfaces, focusing the relationship between the geometry of the surface and the one of its boundary. As special cases, we will consider two families of such surfaces: axisymmetric surfaces and embedded surfaces with planar boundary.

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