

1125-VE-890

Daniel J Freese* (dfreese3@liberty.edu), 5706 Wainwright Avenue, Rockville, MD 20851.

Intrinsic Surfaces of Revolution.

We generalize the Enneper surface by studying surfaces in Euclidean space parametrized on an annular domain, whose first fundamental form and principal curvatures are independent of rotation and principal curvature directions depend only on the angle of rotation. We show that, in general, surfaces whose first fundamental form and shape operator have the above properties and satisfy the Gauss and Codazzi equations must have constant mean curvature, and their principal curvature directions rotate at constant speed. Using Bonnet's Theorem, we construct and classify the minimal case for these surfaces. We also numerically construct the general, nonzero constant mean curvature surfaces, which Smyth has classified. (Received September 12, 2016)