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Charles Anthony Camacho and **Dami Lee*** (damilee@uw.edu). *Geometric realization of genus three Fermat quartic as a triply periodic polyhedral surface.*

We study a specific infinite polyhedral surface whose compact quotient is a genus three Riemann surface that is an eightfold cyclic cover over a sphere branched over three points. Its symmetries allow us to construct hyperbolic structures and various translation structures. With this explicit data, one can find its algebraic description, automorphism group, etc. We will show that the vertices on the polyhedral surface correspond to the Weierstrass points on the quotient Riemann surface and moreover that the surface is a geometric realization of the genus three Fermat quartic. (Received January 23, 2020)