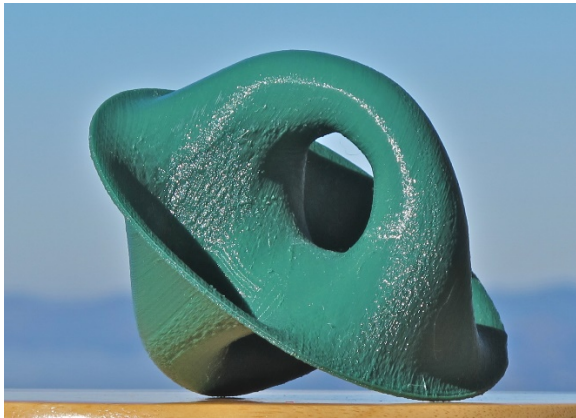


"Krazy Kollection of Konnected Klein-Knottles"

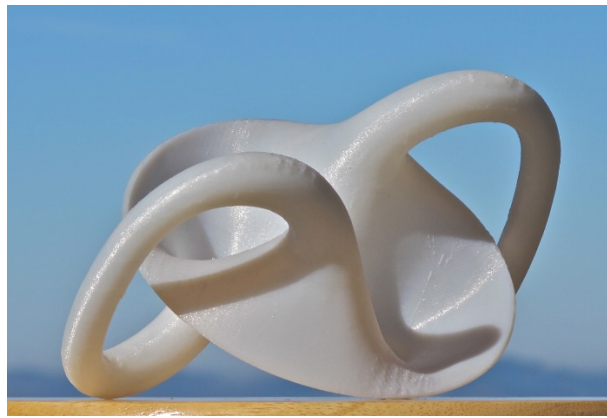
Carlo H. Séquin, EECS, Computer Science Division

Multiple "4-stub Dyck Funnels" are joined into symmetrical clusters based on Platonic and Archimedean polyhedra.

Introducing the basic "4-stub Dyck Funnel":



Single funnel, two handles, 2-sided surface.
→ Genus = 2; Euler-char. = -3; 1 border.



Single funnel, two cross handles, single-sided surface.
→ Genus = 4; Euler-characteristic = -3; 1 border.

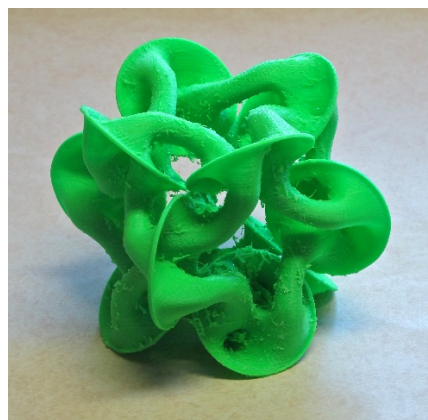


Four funnels, 8 handles, 2-sided surface.
→ Genus = 5; Euler-char. = -12; 4 borders.

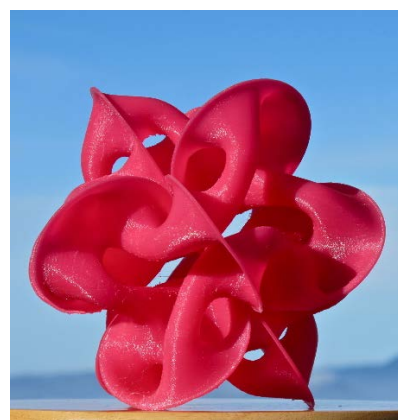
Regular single-sided (non-orientable) clusters of multiple "4-stub Dyck Funnels":



Tetra-cluster, 6 funnels, genus 14.
→ Sum of 7 Klein bottles.



Cube-cluster, 12 funnels, genus 26.
→ Sum of 13 Klein bottles.



Octa-cluster, 12 funnels, genus 26.
→ Sum of 13 Klein bottles.



Dodeca-cluster, 24 funnels, genus 50.
→ Sum of 25 Klein bottles.