

Surfaces

- There is a one to one correspondence between equivalence classes of virtual knot diagrams and closed, oriented 2–dimensional surfaces with immersed knot diagrams modulo stable handle equivalence.
- Stable handle equivalence consists of homeomorphisms of the surface, the addition and removal of handles of the form $S \times I$ to the surface, and Reidemeister moves in the surface.
- We remove handles along cancellation curves, which are simple closed curves in the surface that do not intersect the knot and do not bound a disk.

Two equivalent surface–knot pairs modulo stable handle equivalence.



