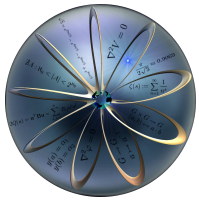

planetmath.org

Math for the people, by the people.

tangle

Canonical name	Tangle
Date of creation	2013-03-22 18:16:41
Last modified on	2013-03-22 18:16:41
Owner	apollonius (16438)
Last modified by	apollonius (16438)
Numerical id	5
Author	apollonius (16438)
Entry type	Definition
Classification	msc 54C25
Related topic	Knot
Related topic	Link
Related topic	Braid

A tangle is a 1-manifold, i.e. a disjoint union of arcs and circles, embedded in $(0,1)^2 \times [0,1]$. The boundary of a tangle is contained in $(0,1)^2 \times \{0,1\}$. Two tangles are considered equivalent if and only if they are ambient isotopic relative to their boundaries. Combinatorially, tangles can be understood as tangle diagrams. Any two tangle diagrams which represent the same tangle can be connected by Reidemeister moves. This is the content of a slight generalization of Reidemeister's theorem. Algebraically, tangles form the morphisms of a tortile monoidal category. This is a corollary of Shum's theorem. Specifically, they form the tortile monoidal category generated by a self-dual,unframed object.