

Abstract

We generalize Jones' planar algebras by internalising the notion to a pivotal braided tensor category \mathcal{C} . To formulate the notion, the planar tangles are now equipped with additional 'anchor lines' which connect the inner circles to the outer circle. We call the resulting notion an *anchored planar algebra*. If we restrict to the case when \mathcal{C} is the category of vector spaces, then we recover the usual notion of a planar algebra.

Building on our previous work on categorified traces, we prove that there is an equivalence of categories between anchored planar algebras in \mathcal{C} and pivotal module tensor categories over \mathcal{C} equipped with a chosen self-dual generator. Even in the case of usual planar algebras, the precise formulation of this theorem, as an equivalence of categories, has not appeared in the literature. Using our theorem, we describe many examples of anchored planar algebras.