



# Representations of the Kauffman skein algebra II: punctured surfaces

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In earlier work, we constructed invariants of irreducible representations of the Kauffman skein algebra of a surface. We introduce here an inverse construction, which to a set of possible invariants associates an irreducible representation that realizes these invariants. The current article is restricted to surfaces with at least one puncture, a condition that will be lifted in subsequent work of the authors that relies on this one. A step in the proof is of independent interest, and describes the algebraic structure of the Thurston intersection form on the space of integer weight systems for a train track.

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