Mathematics > Quantum Algebra

Bilinear Forms on Skein Modules and Steps in Dyck Paths

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We use Jones-Wenzl idempotents to construct bases for the relative Kauffman bracket skein module of a square with n points colored 1 and one point colored h. We consider a natural bilinear form on this skein module. We calculate the determinant of the matrix for this form with respect to the natural basis. We reduce the computation to count some steps in generalized Dyck paths. Moreover, we relate our determinant to a determinant on semi-meanders.

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