The Clebsch–Gordan rule and the Hamming graphs

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Abstract

Let $D \geq 1$ and $q \geq 3$ be two integers. Let $H(D) = H(D, q)$ denote the D-dimensional Hamming graph over a q-element set. Let (D) denote the Terwilliger algebra of $H(D)$. In this talk I will apply the Clebsch–Gordan rule for $U_q(\mathfrak{sl}_2)$ to decompose the standard (D)-module into the direct sum of irreducible (D)-modules.