ERRATA

SOME IRREDUCIBLE REPRESENTATIONS OF THE BRAID GROUP $\mathbb{B}_n$ OF DIMENSION GREATER THAN n

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This is a correction of Theorem 2.3.

Theorem 2.3. *Let $n > 2, n \neq 2m$, then (ϕ_m, V_m) is an irreducible representations of $\mathbb{B}_n$, for all $1 \leq m < n$.*

If $n = 2m$ then (ϕ_m, V_m) is sum of two irreducible representations of $\mathbb{B}_n$.

Proof. In the first case, see the previous proof.

In the second case, note that $X = \{x, y_x : x \in Y\}$, for some $Y \subset X$, where y_x is obtained of x changed the zeros by ones and the ones by zeros. For example, if

$$X := \{(0, 0, 1, 1), (0, 1, 0, 1), (0, 1, 1, 0), (1, 0, 0, 1), (1, 0, 1, 0), (1, 1, 0, 0)\}$$

then $Y := \{(0, 0, 1, 1), (0, 1, 0, 1), (0, 1, 1, 0)\}$.

Let W_1, W_2 be the vector spaces generated by $\beta_1 := \{v_x + v_{y_x} : x \in Y\}$ and $\beta_2 := \{v_x - v_{y_x} : x \in Y\}$ respectively, then W_1 and W_2 are irreducible invariant subspaces of V_m . The proof of the irreducibility of W_1 and W_2 is similar to the previous one. $\square$

Remark. The dimension of W_1 is $\frac{1}{2}\binom{n}{m}$.

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