Han's Bijection via Permutation Codes

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Abstract: We show that Han ' s bijection when restricted to permutations can be carried out in terms of the cyclic major code and the cyclic inversion code. In other words, it maps a permutation π with cyclic major code $(s_1, s_2,..., s_n)$ to a permutation σ with cyclic inversion code $(s_1, s_2,..., s_n)$. We also show that the fixed points of Han ' s map can be characterized by the strong fixed points of Foata ' s second fundamental transformation. The notion of strong fixed points is related to partial Foata maps introduced by Björner and Wachs.

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