From Dyck paths colored by connected matchings to standard Young tableau

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We show a bijection between the set of Dyck paths with ascents of length $m$ colored by connected perfect matchings on $[m]$ that avoid 4-crossings, and the set of standard Young tableau of height less than or equal to seven. Using partial Bell polynomials we give a formula for the number of elements in the set and discuss possible generalizations.

Keywords: Dyck paths, standard Young tableau, partial Bell polynomials