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Summary: We consider two examples of a fully decodable combinatorial encoding of Bernoulli schemes: the encoding via Weyl simplices and the much more complicated encoding via the RSK (Robinson-Schensted-Knuth) correspondence. In the first case, decodability is quite a simple fact, while in the second case, this is a nontrivial result obtained by D. Romik and P. Śniady [Ann. Probab. 43, No. 2, 682–737 (2015; Zbl 1360.60028)] and based on [S. V. Kerov and the author, SIAM J. Algebraic Discrete Methods 7, 116–124 (1986; Zbl 0584.05004), [the author and S. V. Kerov, Sov. Math., Dokl. 18, 527–531 (1977; Zbl 0406.05005); translation from Dokl. Akad. Nauk SSSR 233, 1024–1027 (1977)], and other papers. We comment on the proofs from the viewpoint of the theory of measurable partitions; another proof, using representation theory and generalized Schur-Weyl duality, will be presented elsewhere. We also study a new dynamics of Bernoulli variables on P-tableaux and find the limit 3D-shape of these tableaux.

MSC:
05E10 Combinatorial aspects of representation theory
05A15 Exact enumeration problems, generating functions
14M15 Grassmannians, Schubert varieties, flag manifolds
20C32 Representations of infinite symmetric groups
94A12 Signal theory (characterization, reconstruction, filtering, etc.)
94B99 Theory of error-correcting codes and error-detecting codes

Keywords: coding; RSK-correspondence; filtration; limit shape

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References:
257, 5, 1037-1040 (1981) · Zbl 0534.20008


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