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*Hook formulas for skew shapes: border strips and product formulas*

The celebrated hook-length formula of Frame, Robinson and Thrall from 1954 gives a product formula for the number of standard Young tableaux of straight shape. No such product formula exists for general skew shapes but there are determinantal and positive formulas involving Littlewood-Richardson coefficients. In 2014, Naruse announced a positive formula without these coefficients and very close to the formula for the straight shape case. We give an elementary proof of Naruse's formula based on the case of border strips using the Hamel-Goulden determinantal identities of Schur functions. We also give new product formulas for the number of standard Young tableaux of certain skew shapes using symmetries for evaluations of factorial Schur functions. This is joint work with Igor Pak and Greta Panova.