
Arithmetic of Bethe Ansatz and Gaussian polynomials

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(joint work with Jan Milewski)

We prove a congruence relation for the sums of coefficients of Gaussian polynomials. This calculation is in fact inspired by the famous model in physics of Bethe Ansatz and yields the number of elements in moduli classes of certain fibers of a natural fibration associated with this model. We show that, suitably interpreted, our calculation of number of elements in moduli classes of sums of restricted partitions is in fact equivalent to finding the number of elements in these special fibers. The calculation is done for prime numbers. We also give some generalizations of our main result