

Asymptotic Distribution of Integers with certain Prime Factorizations

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Let $p_1 < p_2 < \dots < p_\nu < \dots$ be the sequence of prime numbers and let $1 < \lambda_1 < \dots < \lambda_d$ be certain integers. In this talk, we show how to obtain a strong asymptotic formula for the distribution of the set of integers having prime factorisation of the form $p_{a_1} p_{a_2} \dots p_{a_n}$ with each of the a_i an element of the multiplicative semigroup generated by the λ_i 's. In the specific case where $\lambda_i = p_{2^i}$, these numbers arise as the Matula numbers of certain rooted trees.