SOME INEQUALITIES FOR THE RESTRICTED PARTITION FUNCTION $p_{\mathcal{A}}(n,k)$

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Abstract: Let $\mathcal{A}=(a_i)_{i=1}^{\infty}$ be a weakly increasing sequence of positive integers, and let $k\in\mathbb{N}_+$ be fixed. For a given non-negative integer n, the restricted partition function $p_{\mathcal{A}}(n,k)$ enumerates all partitions of n with parts in the multiset $\{a_1,a_2,\ldots,a_k\}$. During the talk, we will discuss a few recent results related to the log-behaviour of $p_{\mathcal{A}}(n,k)$ such as the log-balancedness, the log-concavity and beyond. Moreover, we will also present the new Bessenrodt-Ono type inequality for $p_{\mathcal{A}}(n,k)$.

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