



## 日程安排

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ABSTRACT. Let  $\{a_1, a_2, \dots, a_n, \dots\}$  be a sequence of complex numbers which has at most polynomial growth and satisfies an extra assumption. In this talk, inspired by a recent work of Sasane, we give an explanation of the sum

$$a_1 + 2a_2 + 3a_3 + \dots + na_n + \dots,$$

and more generally, for any  $k \in \mathbb{N}$ , the sum

$$1^k a_1 + 2^k a_2 + 3^k a_3 + \dots + n^k a_n + \dots,$$

from the viewpoint of distributions. As applications, we explain the following summation formulas

$$1^k - 2^k + 3^k - \dots = -\frac{E_k(0)}{k!}$$

$$1^k + 2^k + 3^k + \dots = \frac{E_k(0)}{k!}$$

$$1^k - 2^k + 3^k - 4^k + \dots = -\frac{E_k(0)}{k!}$$

where  $E_k(x)$  is the  $k$ -th Eulerian polynomial and  $E_k(0)$  is the  $k$ -th Eulerian number.

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