



## 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

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

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

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

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

$$1^k - 2^k + \dots + (-1)^k = E_k(0)$$

$$\sum_{n=1}^{\infty} \frac{1}{n^k} = \frac{1}{1-k} \sum_{n=1}^{\infty} \frac{1}{n^{k-1}}$$

and give an explanation of the other formulas. All the formulas are available on the [arXiv preprint  \$\arXiv:2308.12001\$](https://arxiv.org/abs/2308.12001)  and the book [Introduction to Distribution Theory](https://www.amazon.com/Introduction-Distribution-Theory/dp/9811214110) by Sasane.

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