

## NUMTA 2023 Special Stream on

### Pythagorean Stream:

### From Numbers to Mathematical Models, Blockchain, and Distributed AI

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**Session keywords:** number theory and cryptography, logic and foundations of mathematics, combinatorics, mathematical models, non-standard mathematics, infinite computing and grossone, communication and information complexity, distributed systems and computing, blockchain, neural networks, artificial intelligence, machine learning.

**Session abstract:** The evolution of the ideas that were born with the Pythagorean School in Calabria, between the sixth and third centuries BC, are found today in the most disparate fields of scientific, philosophical and other knowledge. Mathematics and the concept of number occupied very privileged places in the Pythagorean School: the number itself was seen as *arche*, the first principle of all things. The Pythagoreans, in fact, *“assumed the elements of numbers to be the elements of everything, and the whole universe to be a proportion or number”* (Aristotle). Not only number theory, geometry, mathematical physics, but also computer science and information theory may be considered the evolution of the ideas developed by the Pythagorean School. This stream is intended to collect multidisciplinary contributions that show how the very broad idea of number is related to the nowadays emerging research fields of blockchain technology, distributed computation, machine learning, cryptography, and others. We would also appreciate contributions related to logic and foundations of mathematics, unimaginable numbers, non-standard mathematics, infinite computing and grossone, OpenAI.