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## View from the Top

### Kei Ikeda, Senior Vice President, Head of Technology Planning, NTT Corporation

#### ▼ Abstract

The NTT Group is committed to solving social issues as a leading corporate group in the telecommunications business with a public responsibility. Its goal is to create a well-being society by building the world's most-advanced and sustainable social systems and infrastructures. We interviewed Kei Ikeda, NTT senior vice president, head of technology planning, who also serves as the co-chief artificial intelligence officer and chief information officer, about the NTT Group's technology strategies and his beliefs as a top executive.



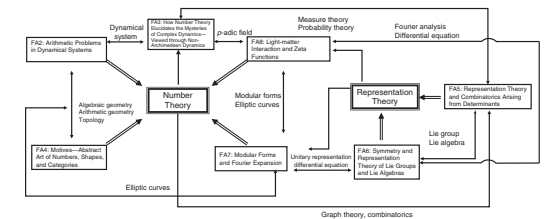
## Feature Articles

### Challenging the Unknown: Mathematical Research and Its Dreams

#### A Mathematical World Woven by Number Theory, Algebraic Geometry, and Representation Theory

#### ▼ Abstract

Through basic research in mathematics, the NTT Institute for Fundamental Mathematics aims to enrich the “fountain of knowledge” that nourishes science and technology. In this article, we first provide an overview of the research being carried out at the Institute then introduce the Institute's core research areas: number theory, especially arithmetic dynamics; algebraic and arithmetic geometry; and representation theory and automorphic forms.



## Regular Articles

### Digital Longitudinal Monitoring of Fiber-optic Link Using Coherent Receiver

#### ▼ Abstract

In fiber-optic communication systems, it is crucial for operators to accurately monitor various physical parameters along optical links to fully leverage the potential transmission capacity and conduct fault analysis. Digital longitudinal monitoring (DLM) has been intensively studied for its capability of monitoring various physical parameters, such as optical power, distributed along the fiber-longitudinal direction by solely processing signals received at coherent receivers. In this article, the fundamentals and recent advances in DLM are reviewed, including working principles, spatial resolution, and key experiments demonstrating its feasibility for use in operations.

