K3 Surfaces

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K3 surfaces are a key piece in the classification of complex analytic or algebraic surfaces. The term was coined by A. Weil in 1958—a result of the initials Kummer, Kähler, Kodaira, and the mountain K2 found in Karakoram. The most famous example is the Kummer surface discovered in the 19th century. K3 surfaces can be considered as a 2-dimensional analogue of an elliptic curve, and the theory of periods—called the Torelli-type theorem for K3 surfaces—was established around 1970.

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Accuracy of Mathematical Models

Dimension Reduction, Homogenization, and Simplification

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The expansion of scientific knowledge and the development of technology are strongly connected with quantitative analysis of mathematical models. Accuracy and reliability are the key properties we wish to understand and control.

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