

第01回

- 講演者: **永野 中行** 氏 (早稲田大学)
 - 題目: Modular functions via $(K3)$ surfaces and an application in number theory
 - 日時: 平成27年5月15日 (金) 15:40 – 16:30

$(K3)$ surfaces are complex surfaces whose canonical bundles are trivial. We can regard $(K3)$ surfaces as 2-dimensional analogy of elliptic curves. There exist good modular functions coming from the moduli of $(K3)$ surfaces. Such modular functions are extensions of classical elliptic modular functions. In this talk, first, we recall basic properties of the moduli of $(K3)$ surfaces. Next, we will see some examples of $(K3)$ modular functions given by several researchers. At the last, the speaker will present a result of the Hilbert modular functions for the minimal discriminant via $(K3)$ surfaces. This result has applications in number theory. Namely, the period mappings of $(K3)$ surfaces allow us to obtain new explicit models of Shimura curves and a simple construction of class fields over quartic (CM) -fields.

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