

SCMS Seminar



DR-INDECOMPOSIBLE OF SOME SEMI-STABLE REDUCTION OVER THE WITT RING

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SCMS

Time: 9:00 -9:30, Thursday, June 29, 2017

Venue: Room 2201, East Guanghua Tower (Main), Fudan University

Abstract:

DR-decomposability of a smooth variety is an important property which leads to the first algebraic proof of Kodaira vanishing and degeneration of Hodge-de Rham spectral sequence. In the case of the semi-stable variety, which appears at the boundary of the moduli of manifolds, the DR-decomposability is in mixed characteristic is posted by L.Illusie as a problem in a 1996 survey. In this talk, I will report my recent work on this problem (joint with Mao Sheng). It turns out that Illusie's problem generally has a negative answer. Moreover, we show that the DR-decomposability is not equivalent to the degeneration of the Hodge-de Rham spectral sequence.

$$\Delta y_i = \int_{x_i}^{x_{i+1}} y' dx - \left(\sum_{j=1}^{i-1} a_{ij} x_j^{(k)} + \sum_{j=i+1}^n a_{ij} x_j^{(k)} \right)$$
$$\int_{x_k}^{x_{k+1}} f(x, y) dx = \int_{x_k}^{x_{k+1}} y' dx = y(x)$$
$$-\sqrt{(y_n + 0.5\tau k_1)^2 + (t_n + 0.5\tau)^2}$$