

Zeta functions over \mathbb{F}_1 (Conference)

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We report studies on various zeta functions over \mathbb{F}_1 (absolute zeta functions) containing the analyticity, determinant expressions, analogues of the Riemann hypothesis and the tensor structure of the singularities. We notice on noncommutative zeta functions. The talk shows also advancements obtained after the paper A.Deitmar, S.Koyama, and N.Kurokawa: "Absolute zeta functions", Proc. Japan Acad. 84A (2008), No.8 (Sept.),138-142.

Absolute Modular Forms (Workshop)

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Absolute modular forms are modular forms for the general linear group over \mathbb{F}_1 . In this talk we introduce a kind of such modular forms as functions of semi-lattices, those are analogous to the classical modular functions of lattices. We call them Stirling modular forms after Barnes (1904). Stirling modular forms are produced from multiple sine functions studied towards the Kroneckerfs Jugendtraum for real quadratic fields after Takuro Shintani (1977). (There should exist relations with noncommutative torus.) Stirling modular forms and multiple sine functions were studied in the following papers:

- a) Kurokawa, Nobushige; Koyama, Shin-ya: "Multiple sine functions", Forum Math.15 (2003) 839–876.
- b) Kurokawa, Nobushige: "Limit values of Eisenstein series and multiple cotangent functions", Journal of Number Theory 128 (2008), 1775-1783,
- c) Koyama, Shin-ya; Kurokawa, Nobushige : "Multiple Eisenstein series and multiple cotangent functions", Journal of Number Theory 128 (2008), 1769-1774. The application contains the formula for limit values of non- classical Eisenstein series of odd weights.