

Arbeitsgruppenseminar Kreimer

The Structure of local quantum field theory

Seminar

David Broadhurst (Open U., UK)

Modular forms from Feynman integrals

Francis Brown and Oliver Schnetz have identified an 8-loop Feynman diagram whose period is considered unlikely to be reducible to polylogarithms. The obstacle to such a reduction is a singular K3 surface, obtained from the first Symanzik polynomial. In this talk, I shall consider massive Feynman integrals, with K3 surfaces obtained from the second Symanzik polynomial. Remarkable relations have been discovered between the values of these integrals and L-functions of modular forms whose Fourier coefficients enumerate zeros of polynomials in finite fields.

Wednesday, June 8th, RUD 25, Rm 1.114, at noon