



## Dr. David Broadhurst Modular forms from Feynman integrals

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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  $\mathbb{F}_q$ .

**Kontakt:**

Humboldt-Universität zu Berlin . Institut für Mathematik

SFB 647 . Unter den Linden 6 . 10099 Berlin

Tel. +49 30 2093 1804 . Fax. +49 30 2093 2727

sfb647@math.hu-berlin.de

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