



WYDZIAŁ MATEMATYCZNO – FIZYCZNY Instytut Matematyki

Zaprasza na wykład pod tytułem:

ON THE EQUATION $x^2 + y^3 + z^5 = 0$

który wygłosi:

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UNIWERSYTET W PADERBORN

The polynomial equation $f(x; y; z) = 0$, where f denotes the polynomial $x^2 + y^3 + z^5$ has an interesting history relating to Plato's classification of regular solids via Felix Klein's study of the symmetry group of the icosahedron and its associated invariants. Here, solutions of the equation $f(x; y; z) = 0$ in complex 3-space form an associated geometric object, known as the so-called E_8 -singularity, an object related to many interesting mathematical subjects.

In my talk, I will additionally look at “non-commutative solutions” of the equation $f(X; Y; Z) = 0$, by looking at solutions which are (sequences of) matrices. This yields an interesting problem of linear algebra leading to the representation theory of canonical algebras (sense of Ringel) which are given in terms of a finite quiver (=oriented graph) together with a single relation coming from the polynomial f . I will describe the solution of this problem in terms of its Auslander-Reiten quiver, a solution known for more than 30 years. The corresponding normal form problem in matrix terms is more recent and was solved by Kussin-Meltzer (2007) and Komoda-Meltzer (2008).

It requires sophisticated mathematical tools to relate the commutative and the non-commutative solutions of $f(x; y; z)$ showing a remarkable unity of mathematics. These aspects I will discuss at the end of my talk.

Wykład odbędzie się **01 czerwca 2011 r.** (środa)
o godz. **16.00** w sali 210
w budynku Wydziału Matematyczno – Fizycznego.