IU^B International University Bremen

Mathematics Colloquium at IUB

Günter M. Ziegler

(TU Berlin)

will speak on

The Combinatorics of the 3-Dimensional Sphere

Date: **Monday, September 12, 2005**
Time: **17:15**
Place: **Lecture Hall Research II, IUB**

Abstract:

Triangulations and cell decompositions of the two-dimensional sphere can be understood in terms of three-dimensional polyhedra. The corresponding theory is classical, visually accessible, and quite complete — due to Tutte, Steinitz, and many others.

Triangulations and cell decompositions of the three-dimensional sphere pose much bigger problems to us. In this lecture we shall thus treat questions like
"How many triangulations are there (with n vertices, say)?"
"Do most of these correspond to convex polytopes?"
"How can the vertex-/edge-/face-numbers be characterized?"

Our (partial) answers to such questions involve a nice interplay of combinatorial ideas, new geometric constructions, advanced visualization tools, as well as differential geometric and topological components.

Colloquium Tea at ca. 16:45 in the Tea Room of Research II, close to the lecture hall. Everybody is welcome!

M. Stoll