

GATERSLEBEN LECTURE



Speaker: **Prof. Dr. Stefan Schuster**
(Dept. of Bioinformatics, Jena University)
<http://pinguin.biologie.uni-jena.de/bioinformatik/>

Title: *Biochemical examples of application of elementary-modes analysis to plant metabolism*

Time: **Tuesday, May 3, 2011, 4:00 pm**

Abstract:

Elementary-mode analysis has become a well-established theoretical tool in metabolic pathway analysis. It allows one to decompose complex metabolic networks into the smallest functional entities, which can be interpreted as biochemical pathways. Here, we give several illustrative examples of application of that analysis to plant metabolism. They include the Calvin cycle, the synthesis of hexoses and starch in CAM plants and the synthesis of nitrogen-rich amino acids in *Chlamydomonas reinhardtii*. Implications for the maximization of molar yields important in biotechnology are discussed. The question is tackled whether maximization of molar yield in metabolic networks is favoured by biological evolution, which leads to a critical re-examination of Flux Balance Analysis. Finally, ways of combining pathway analysis with evolutionary game theory are presented.

Place: **Lecture Hall, IPK Gatersleben**

Prof. Dr. Andreas Graner
(organizer)

Prof. Dr. Falk Schreiber
(host)

If you are interested in personal discussions with the speaker please contact the host (phone: 039482/5753) beforehand.