



EINLADUNG

zum

ZIH - KOLLOQUIUM

Title: Predicting oncogeny by means of mathematical modelling

**Referent: Prof. Dr. Eugen Mamontov
Universität Göteborg, Schweden**

Abstract:

Cancer (i.e. malignant tumor) is a disease known in human history during at least five thousand years. It is a few millenia older than tobacco smoking or car exhaust. Oncogeny, or formation of a tumor (benign or malignant), is a multistage process. It develops in various living systems.

Oncogeny is difficult to prevent and cure. To improve the corresponding therapies and drugs, one has to learn how oncogeny can be predicted. The consistent method to predict it is modelling it.

The present talk reports some results, and invites to a discussion, on what models can predict oncogeny. It comprises the following topics:

- Living and nonliving systems: Some distinguishing features
- Complexity and lessons from physics
- Oncogeny: The key phenomena and implications for modelling
- From minimal to comprehensive models
- Why nonlinear reaction-diffusion model?
- Why active-particle generalized kinetic model?
- Examples of numerical-simulation results. The effect of radiation therapy
- Directions for future research and collaboration

Most of the results presented at the talk were published in both biological and mathematical journals.

Ort: Willers-Bau C 207

Zeit: Mittwoch, den 14. Juni 2006, 10:00 Uhr

gez. Prof. Dr. Wolfgang E. Nagel