

# PHYSIKALISCHES KOLLOQUIUM

Mittwoch, den 04.04.2012, um 17:15 Uhr

Ort: Reichenhainer Str. 90; Neues Hörsaalgebäude, Raum: 2/N013



## Prof. Dr. Jens Timmer

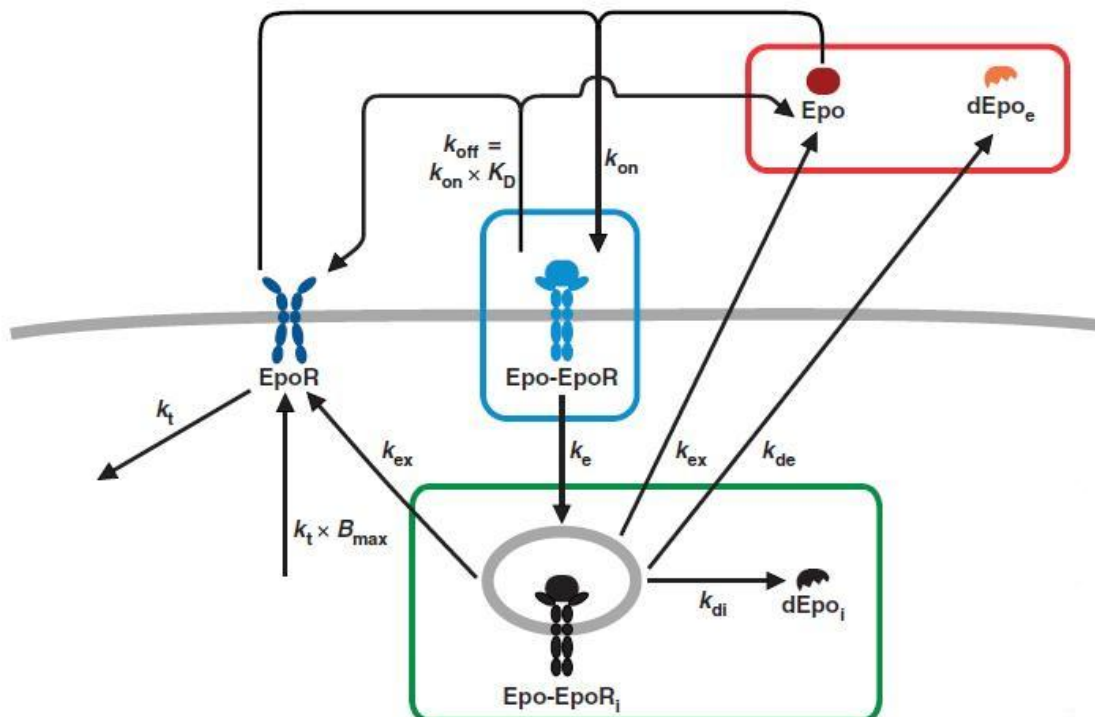
Institute of Physics and  
Freiburg Institute for Advanced Studies (FRIAS)  
University of Freiburg

## Systems Biology of the Epo-Receptor

Using mathematical models to understand the inanimate part of nature, physics looks back to a three hundred years success story. In recent years the scope of mathematical modelling has been extended to the animate part of nature especially in the field of cell biology, an approach denoted by "systems biology". As an example, I will discuss a modelling endeavour to understand the information processing of cell surface receptors involved in the generation of red blood cells and argue that mathematical modelling can deliver insights into biological systems that can not be obtained by classical biological approaches. Finally, I will give an outlook how modelling approaches can improve drug development.

### Reference:

V. Becker, M. Schilling, J. Bachmann, U. Baumann, A. Raue, T. Maiwald, J. Timmer, U. Klingmüller. Covering a broad dynamic range: Information processing at the erythropoietin receptor. Science 328, 2010, 1404-1408



Alle Zuhörer sind ab 17:00 Uhr zum Kaffee vor dem Hörsaal eingeladen.

Informationen zum Vortrag erteilt Prof. Dr. Günter Radons, Tel. 0371/531-33205