Polymers under Multiple Constraints

Polymer- & Soft-Matter-Seminar

Tuesday, 3rd November 2015

at: **5.15pm**

VDP4 1.27, Von-Danckelmann-Platz 4, 06120 Halle

Dr. Arnold Boersma

(University of Groningen, Netherlands)

“Quantification and consequences of macro-molecular crowding"

Cells are highly crowded with proteins and polynucleotides, with concentrations ranging from 80 to 400 mg/mL. Knowledge of crowding is critical to understand cell physiology and to assess its relevance for medical science and biotechnology: Any reaction that depends on the available volume can be affected by crowding, which includes diffusion, conformation, association, folding, phase separation, and aggregation of the biopolymers. However, the effects of crowding in cells are complex and have remained difficult to tract. We need to study crowding and determine its consequence in the living cell. We have developed a sensor to quantify the excluded volume in living cells. This sensor is an excellent platform to study the effects of crowding and determine the consequences of macromolecular crowding in living cells.