Seminar/Talk

Quantifying in quantitative cell biology: how, what, and why?

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Quantification is the heart of every scientific discipline, as it provides a solid basis to mathematical models, which are required for understanding complicated systems. Since a few ten years, researchers have started to model also cell biological processes mathematically, yielding predictions that are testable by experiments. In many cases, however, the outcome was rather disappointing: many models although sometimes generating the correct output did not assume the correct molecular mechanism, thereby leading to increased confusion instead of clarifications. Part of the problem are limitations in current measurement technologies; ideally, we would like to directly observe and quantify molecular processes in the natural cellular context. In my talk I will showcase by a few examples, how we can determine molecular parameters like protein association, its kinetics, and its dependence on the cellular environment directly in the living cell using single molecule techniques. I will highlight parameters that have been largely overlooked, such as forces acting on biomolecules. Finally, I will also show some pitfalls that may occur on our way to quantitative results.

Tuesday, October 16, 2018 01:00pm - 02:00pm
Mondi Seminar Room 3, Central Building

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