Festive Colloquium on the Occasion of Prof. Alexander Lichtenstein's 70th Birthday

Report of Contributions

Contribution ID: **1** Type: **not specified**

About local and non-local correlations - A brief history of the electronic structure problem in correlated electron materials

Friday 16 May 2025 14:00 (1 hour)

Photon Science Colloquium

Presenter: BIERMANN, Silke (Ecole Polytechnique)

Contribution ID: **2** Type: **not specified**

Quantum Impurity Solvers: Recent Advances

Friday 16 May 2025 15:00 (30 minutes)

Quantum impurity problems first appeared in the treatment of magnetic atoms embedded in metals, and now act as auxiliary objects within the dynamical mean field theory of correlated materials. Among Prof. Lichtenstein's many notable contributions to our current understanding of the physics of materials are his seminal work in developing Monte Carlo techniques for simulating impurity models. Yet, in many regimes and for many observables, simulations of this type remain either infeasible or extremely expensive. Here, I will discuss prospects for addressing this challenge by combining Inchworm Monte Carlo techniques with some mathematical technologies that have recently drawn attention in physics, such as tensor train cross-interpolation and pole representations.

Presenter: COHEN, Guy (Tel Aviv U)

Contribution ID: **3** Type: **not specified**

Enantio-sensitive spin-orientation locking and spin vortices induced by geometric fields in chiral molecules

Friday 16 May 2025 16:00 (30 minutes)

Presenter: SMIRNOVA, Olga (Max Born Inst, Berlin)

Contribution ID: **4** Type: **not specified**

Speaker 3

Contribution ID: **5** Type: **not specified**

What does it tell us when curves cross?

Friday 16 May 2025 16:30 (30 minutes)

In physics and chemistry it is often observed that the curves of a physical quantity f(x,p) cross at one or more points, when plotted as a function of x for different values of the parameter p. Sometimes these crossing points are confined to a remarkably narrow region, or are even located at a single point, called “isosbestic point”. For example, crossing points are found in the curves of the heat capacity C(T,X) of many correlated materials, with X as the pressure or the magnetic field, and of the Hubbard model, with X as the interaction U, but also in the Raman response chi”(omega,T) and many other quantities. I will explain that crossing points provide valuable information about the system in which they occur.

Presenter: VOLLHARDT, Dieter (U Augsburg)