**Correlated Electron Physics beyond the Hubbard Model**

**Tuesday, February 05th 2019**  
(House of Science Bremen/Downtown)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
<th>Speaker(s)</th>
<th>Topic</th>
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<tbody>
<tr>
<td>08:00</td>
<td>Registration</td>
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<tr>
<td>08:50</td>
<td>Opening and welcome, Tim Wehling</td>
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| 09:00  | DFT-1 |          | Philippe Wernig | University of Fribourg  
Department of Physics | Dynamical Mean Field Theory and diagrammatic extensions thereof |
| 09:40  | DFT-2 |          | Alexander S. Lichtenstein | University of Hamburg  
Department of Physics | Non-local correlated effects in magnetic materials |
| 10:20  | Coffee Break |          | Erik van Loon | University of Bremen  
Department of Physics | Dual boson approach to spatial correlations |
| 11:00  | Lunch Break (Restaurant Q1) |          |            |       |
| 12:15  | Lunch Break (Restaurant Q1) and Coffee |          |            |       |
| 13:50  | Quantum Cluster Approaches |          |            |       |
| 15:30  | Many-body perturbation theory beyond GW |          | Matteo Cuccuraci | Swiss Federal Institute of Technology (ETH Zurich)  
Department of Physics | Ab initio modeling of transition metal compounds using the extended DFT-UN-V self-consistent Hubbard parameters |
| 13:50  | Many-body perturbation theory beyond GW |          | Ferdi Aryasetiawan | Lund University | The impact of long-range interaction on the self-consistent Hubbard parameters |
| 15:10  | Coffee Break |          |            |       |
| 15:10  | lattice Quantum Monte Carlo simulations of layered materials |          | Matteo Rüsner | Radboud University, Nijmegen  
Department of Physics |       |
| 16:20  | Coffee Break |          |            |       |
| 15:40  | Andro-Mari S. Trelmbay |          | Yusuke Arita | University of Tokyo  
Department of Physics | Photo-induced charge transfer in the anhelent insulator regime |
| 17:00  | Effects of retardation in the renormalization group approach to interacting fermions |          | Malte Schüler | University of Bremen  
Department of Physics  
Center for Computational Materials Science |       |
| 17:40  | Round Table Discussion - Diagrammatic and cluster extensions of DFT: where are we? |          |            |       |
| 18:40  | Pickup to Welcome Reception (The Bremen Town Musicians, The Statue near the town hall) |          |            |       |
| 19:00  | Welcome Reception (Bremen Town Hall) |          |            |       |

**Wednesday, February 06th 2019**  
(House of Science Bremen/Downtown)

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| 09:00  | DFT-3 |          | Lucan K. Wagner | University of Illinois at Urbana-Champaign  
Department of Physics | Hubbard Hamiltonian from ab-initio quantum Monte Carlo simulations |
| 10:20  | DFT-4 |          | George Booth | King’s College London  
Department of Physics | Static mean field theory, ‘Dynamic’ mean field theory, and ‘Static’ Dynamical mean field theory |
| 10:50  | Coffee Break |          |            |       |
| 12:30  | Lunch Break (Restaurant Q1) |          |            |       |
| 12:50  | Lunch Break (Restaurant Q1) and Coffee |          |            |       |

**Thursday, February 07th 2019**  
(House of Science Bremen/Downtown)

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| 09:40  | Lattice Quantum Monte Carlo |          | Stefan Wessel | RWTH Aachen University  
Department of Physics | Kinetic density interactions in auxiliary-field quantum Monte Carlo simulations |
| 10:20  | DFT-5 |          | Thomas M. deveraux | Stanford University  
Department of Materials Science | Metallic transport, CDWs, and pairing without quasiparticles in the Hubbard model |
| 11:30  | Concluding Round Table Discussion - How to approach correlated materials with non-local interactions realistically: next steps |          |            |       |
| 12:30  | Closing words and departure |          |            |       |

**Friday, February 08th 2019**  
(House of Science Bremen/Downtown)

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| 09:00  | DFT-6 |          | Boris Sivutunov | University of Massachusetts Amherst  
Department of Physics | Multi-loop functional renormalization group for response functions |
| 10:20  | DFT-7 |          | Nicholas Proukakis | University of Massachusetts Amherst  
Department of Physics | Functional Renormalization Group |
| 10:50  | Coffee Break |          |            |       |
| 11:30  | Poster Session + Catering Buffet |          |            |       |

**Conference Organisers**

- Tim O. Wehling  
  University of Bremen  
  Department of Physics, ITP  
  BCCMS  
  http://www.itp.uni-bremen.de/ag-wehling/  
- Thomas Fauser  
  University of Bremen  
  Department of Physics, ITP  
  BCCMS  
  http://phys.columbia.edu/~millis/  
- Michael Fröltz  
  University of Bremen  
  Department of Physics, ITP  
  BCCMS  
  http://phys.columbia.edu/~millis/  
- Andrew Millis  
  Flatiron Institute, New York, USA  
  https://www.cpht.polytechnique.fr/  
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<td>Andrew Millis</td>
<td>Flatiron Institute, New York, USA</td>
<td>Functional Renormalization Group for response functions</td>
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| Sabine Andersen | University of Tübingen  
Department of Physics | Multi-loop functional renormalization group for response functions |
| Boris Sivutunov | University of Massachusetts Amherst  
Department of Physics | Multi-loop functional renormalization group for response functions |
| Nicholas Proukakis | University of Massachusetts Amherst  
Department of Physics | Multi-loop functional renormalization group for response functions |
| Malte Schüler | University of Bremen  
Department of Physics | Multi-loop functional renormalization group for response functions |
| Boris Sivutunov | University of Massachusetts Amherst  
Department of Physics | Multi-loop functional renormalization group for response functions |
| Andrew Millis | Flatiron Institute, New York, USA | Functional Renormalization Group for response functions |

**Contact Information**

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  Flatiron Institute, New York, USA  
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