

**Density Functionals for  
Many-Particle Systems:  
Mathematical Theory and Physical Applications  
of Effective Equations**

**[16 - 20 Sep 2019]**

Partially supported by Julian Schwinger Foundation  
Session 3: Coordinators: Eric Cances and Neepa Maitra

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**Venue:**

**IMS Auditorium**

**Admission is free**



3 Prince George's Park Singapore 118402  
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# Density Functionals for Many-Particle Systems: Mathematical Theory and Physical Applications of Effective Equations

Session 3 (16 - 20 Sep 2019)

Coordinators: Eric Cancès and Neepa Maitra

Venue:

IMS Auditorium, 3 Prince George's Park Singapore 118402

## Monday, 16 September 2019

Time	Title
0930 - 0945	Registration
0945 - 1045	Opening Remarks
1045 - 1100	Coffee Break
1100 - 1145	Heinz Siedentop: Excess charge problem for the Vlasov equation and the time-dependent Thomas-Fermi theory
1145 - 1200	Coffee Break
1200 - 1330	P. Pickl: Tutorial on Derivation of mean-field limits for Bose gases
1330 - 1500	Lunch Break
1500 - 1600	Discussion: Bosonic systems (Chair: V. Bach)

## Tuesday, 17 September 2019

Time	Title
0930 - 0945	Registration
0945 - 1045	N. Maitra : introduction to TDDFT and memory.
1045 - 1100	Coffee Break
1100 - 1130	N. Maitra : introduction to TDDFT (continued)
1130 - 1430	Lunch Break
1430 - 1530	G. Vignale: Quantum Continuum Mechanics for Many-Body Systems
1530 - 1630	Discussion: TDDFT (Chair: K. Burke)
1630 - 1645	Coffee Break
1830 - 1930	Public Lecture: Kieron Burke: The importance of quantum mechanics to saving our planet  <i>Lecture Theatre 31 S16, Level 3, Science Drive 2, Singapore 117543</i>

Wednesday, 18 September 2019	
Time	Title
0930 - 0945	Registration
0945 - 1045	F. Nier: Solving transport equation and dynamical mean field asymptotics for bosons
1045 - 1100	Coffee Break
1100 - 1200	Z. Ammari: Existence and uniqueness of solutions for the Hartree and Gross-Pitaevskii hierarchy equations
1200 - 1300	Lunch Reception at IMS
1300 - 1700	Social Event: Asian Civilisations Museum

Thursday, 19 September 2019	
Time	Title
0930 - 0945	Registration
0945 - 1045	J. Dobson: Does the exchange–correlation kernel $f_{xc}$ have a very long-ranged dependence on the groundstate electron density?
1045 - 1200	Coffee break
1200 - 1330	George Batrouni: Tutorial on New quantum Monte Carlo algorithm for electron-phonon systems
1330 - 1430	Lunch Break
1430 - 1530	T. Stein: Exploring molecular formation and growth upon ionization of van der Waals clusters using ab-initio molecular dynamics
1600 - 1730	Colloquium Talk: New trends in the physics of disordered quantum systems <i>CQT Level 3 Seminar Room, S15-03-15</i> <i>Block S15, 3 Science Drive 2, Singapore 117543</i>

Friday, 20 September 2019	
Time	Title
0930 - 0945	Registration
0945 - 1045	M.G. Medvedev: Relationship between accuracies of ground-state electron densities and TD-DFT excitations
1045 - 1100	Coffee Break
1100 - 1200	E. Cancès: Error estimators for numerical simulations of quantum models
1200 - 1400	Lunch Break
1400 - 1500	Discussion: TDDFT (Chair: A. Savin)
1500 - 1530	Coffee Break
1530 - 1630	Discussion: TDDFT (chair: E. Cancès)