



## COQUIT workshop 18 – 20 November 2010

	Thursday	Friday	Saturday
10:00 – 10:30		<b>Coffee</b>	Zeier
10:30 – 11:00	<b>Coffee</b>	Van den Nest	
11:00 – 11:30			<b>Coffee</b>
11:30 – 12:00	Kraus	<b>Discussion/Lunch</b>	Toth
12:00 – 12:30			
12:30 – 13:00	<b>Lunch and discussion time</b>		Browne
13:00 – 13:30			
13:30 – 14:00		Harrow	
14:00 – 14:30			
14:30 – 15:00	Gross	Montanaro	
15:00 – 15:30			
15:30 – 16:00	Christandl	<b>Coffee</b>	
16:00 – 16:30		Flammia*	
16:30 – 17:00	<b>Coffee</b>		
17:00 – 17:30	Osborne	Renes*	
17:30 – 18:00			
18:00 – 18:30	Schuch		
18:30 – 19:00			

Workshop dinner: Thursday at 20:30 at “Gondel”, Georgstraße 36, a short walk from “Kröpcke” U-bahn station.

All talks will be held in room 031. Coffee breaks are in room 020. The talks marked \* will be held in room 268.

### **Thursday**

**Christina Kraus:** Simulation Methods for Fermionic Lattice Systems: A Quantum Information Approach

**David Gross:** TBA

**Matthias Christandl:** Faithful Squashed Entanglement

**Tobias Osborne:** The variational principle and quantum field theory.

**Norbert Schuch:** Understanding quantum phases using Matrix Product States and PEPS

**Friday**

**Maarten Van den Nest:** Matchgate computations and linear threshold gates

**Dan Browne:** Classical Correlations, Bell inequalities, Linearity and Loopholes

**Aram Harrow:** A test for product states, with application to multiple-prover Merlin-Arthur games

**Ashley Montanaro:** A new exponential separation between quantum and classical one-way communication complexity

**Steve Flammia:** Quantum double models from two-body local Hamiltonians

**Joe Renes:** Holonomic quantum computing using symmetry-protected topological order

**Saturday**

**Robert Zeier:** Taming the zoo of dynamical quantum systems

**Geza Toth:** Generalized spin squeezing of unpolarized atomic ensembles and its modeling with Gaussian states

## ***Information and orientation***

The workshop will be held at the Institut für Theoretische Physik (Institute for Theoretical Physics, ITP) at the Leibniz Universität Hannover which is a 30 minute walk from the city centre.

Most of the talks will be held in room 031 and coffee breaks will be held in room 020. Both of these rooms are on the ground floor of the ITP. To get to both of these rooms you should follow the signs to the “Quanteninformation” group offices. To get in the front door of the ITP you will need to push the button to the right of front door. If you find that the door to the “Quanteninformation” group’s offices is locked, press the switch marked “Klingel” and someone will open the door for you.

### **Nordstadt**

The ITP and the University are in the suburb of “Nordstadt” which is a fairly lively suburb with many students, university employees, activists, artists and immigrants. There are many bars and pubs in the neighbourhood that cater to the university crowd.

*See below for a map of the Nordstadt area with some other key/useful landmarks.*

### **The Gardens**

Adjacent to Nordstadt is the **Georgengarten** which spans from the city end of the university to the **Herrenhauser Gärten** and the suburb of Herrenhausen. If you have some spare time during your stay in Hannover the gardens are worth visiting. On the opposite side of the Georgengarten to Nordstadt is the **river Leine** and the suburb of **Linden**.

### **Linden**

Linden is across the gardens and the river from Nordstadt. It is a famously cosmopolitan suburb with a very energetic vibe. Like Nordstadt, the population of Linden is a mix of students, academics, immigrants and counter-culture types. There is a friendly rivalry between these neighboring suburbs which culminates once a year in a “battle” for walk bridge over the Leine. *A point worth noting is that the main bridge connecting Linden to Nordstadt does not appear on Google Maps!* Ask a local for directions.

The area has a number of very good cafes, restaurants, bars and nightclubs. Many of which are centered on “Limmerstrasse” which is the main high street in Linden Nord. “Limmerstrasse” is a 20 – 25 minute walk from the ITP or a 10 minute tram ride on the “10” from downtown.

### **Zentrum**

Literally translated as “Center”, Hannover’s downtown is fairly typical of those that were reconstructed in the post-war era (in that the architecture is a bit uninspiring). There are a number of restaurants and bars.

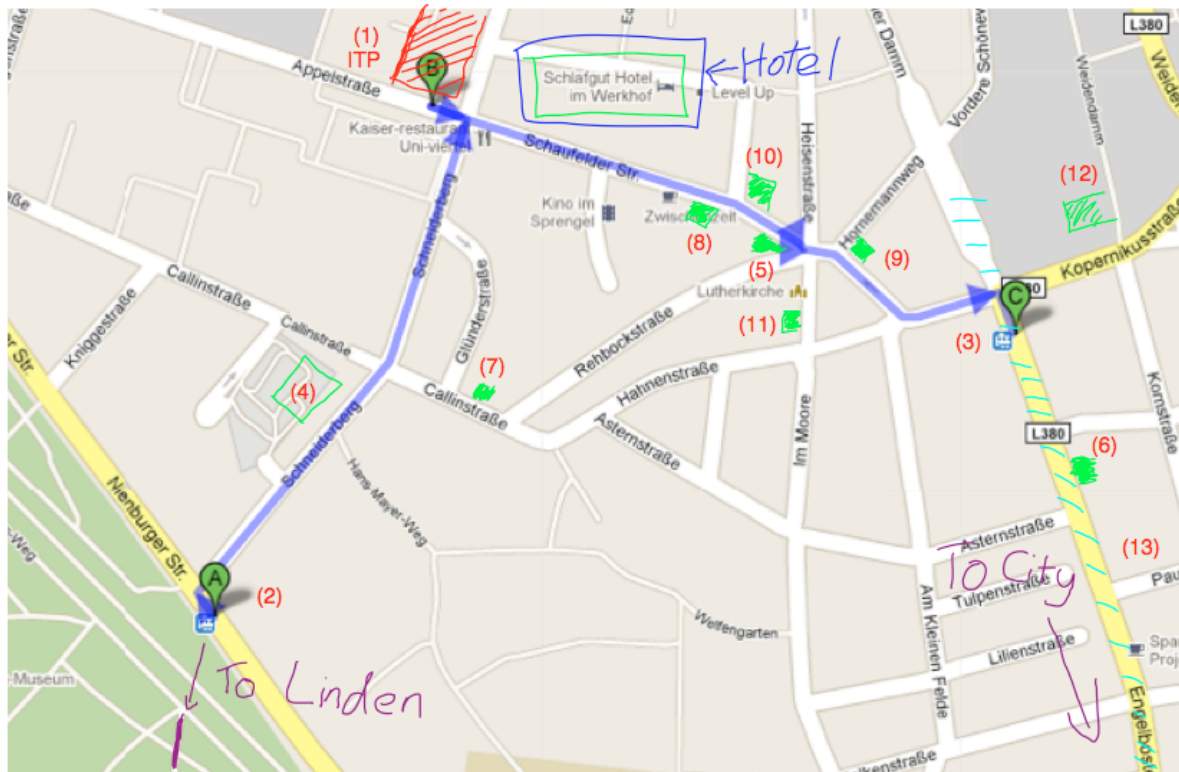
## **Public Transport**

Hannover is well serviced by public transport. Like most German cities it contains rail network (S-bahn), a light-rail/tram/underground network (U-bahn) and a bus network.

Tickets can mostly be bought from the ticket machines found at most tram stops or train stations. The machines accept cash and a variety of cards. If you buy a ticket for local transport in Hannover from a “DB” machine (normally found at the S-bahn stations or the main train station) please be aware that it might need to be time-stamped before your journey. Normally there is a separate machine with a solitary slot for your ticket close by. Tickets bought from the Üstra machines (normally found at the U-bahn stops) don’t need to be stamped.

As the ITP is close to the center of Hannover we expect that the attendees will probably mostly use the U-bahn/tram network. The ITP is a 5 minute walk from 2 tram stops which are marked on the map below.

*The ITP is also a 5 – 10 minute walk from the “Nordstadt” S-bahn stop – which is useful as the trains to the airport travel through this station.*



## Venue:

(1) ITP

## Tram/U-bahn stops

(2) Stop: Schneiderberg/Wilhelm-Busch-Museum. Lines 4 and 5. Trams run from the early morning until early morning.

(3) Stop: Kopernikusstrasse. Lines 6 and 11. Trams run from the early morning until early morning.

## Food and coffee

(4) *Mensa*: Large university cafeteria. A variety of foods. Cheap. Open Monday – Friday during the middle of the day.

(5) *Der Muffin Mann*. Good coffee, great muffins, bagels and other tasty snacks. Open daily from approx 8 AM till approx 6 PM.

(6) *24 grad*: Great coffee (!), also has cake, paninis and other snacks. Open during the week from approx 10 AM – 7 PM. Opens closer to the middle of the day on weekends. Sometimes a bit crowded.

(7) *Campus suite*: Pretty average coffee. Sells a variety of sandwiches and various other light meal options. Open daily.

(8) Generic Asian take-away. Cheap. Lots of menu options. Opens for lunch and stays open till fairly late.

(9) Another generic Asian take-away. Also cheap. Also lots of menu options (slightly better for vegetarians, bit more Thai style than Chinese). Also opens for lunch and is

open till fairly late.

(10) *Pizza and Pasta*. Generic and cheap Italian restaurant. Opens at lunch time and stays open till fairly late.

(11) *Suppenhandlung*: Sells a variety of freshly prepared soups. Open for lunch.

**Shops etc.**

(12) *Rewe*: Medium to large supermarket. Open 7 AM – 11 PM Monday to Saturday.

(13) and the aqua lines. The Engelbosteler Damm (the “e-damm”) . High street with shops, banks, bakeries, chemists, bars, cafes, etc. *Also has number of kebab shops and other food options, some of which are open untill quite late at night.*