

# 6th Workshop on Detector Development

Including a School on FPGA programming

## 26 February -1 March 2013

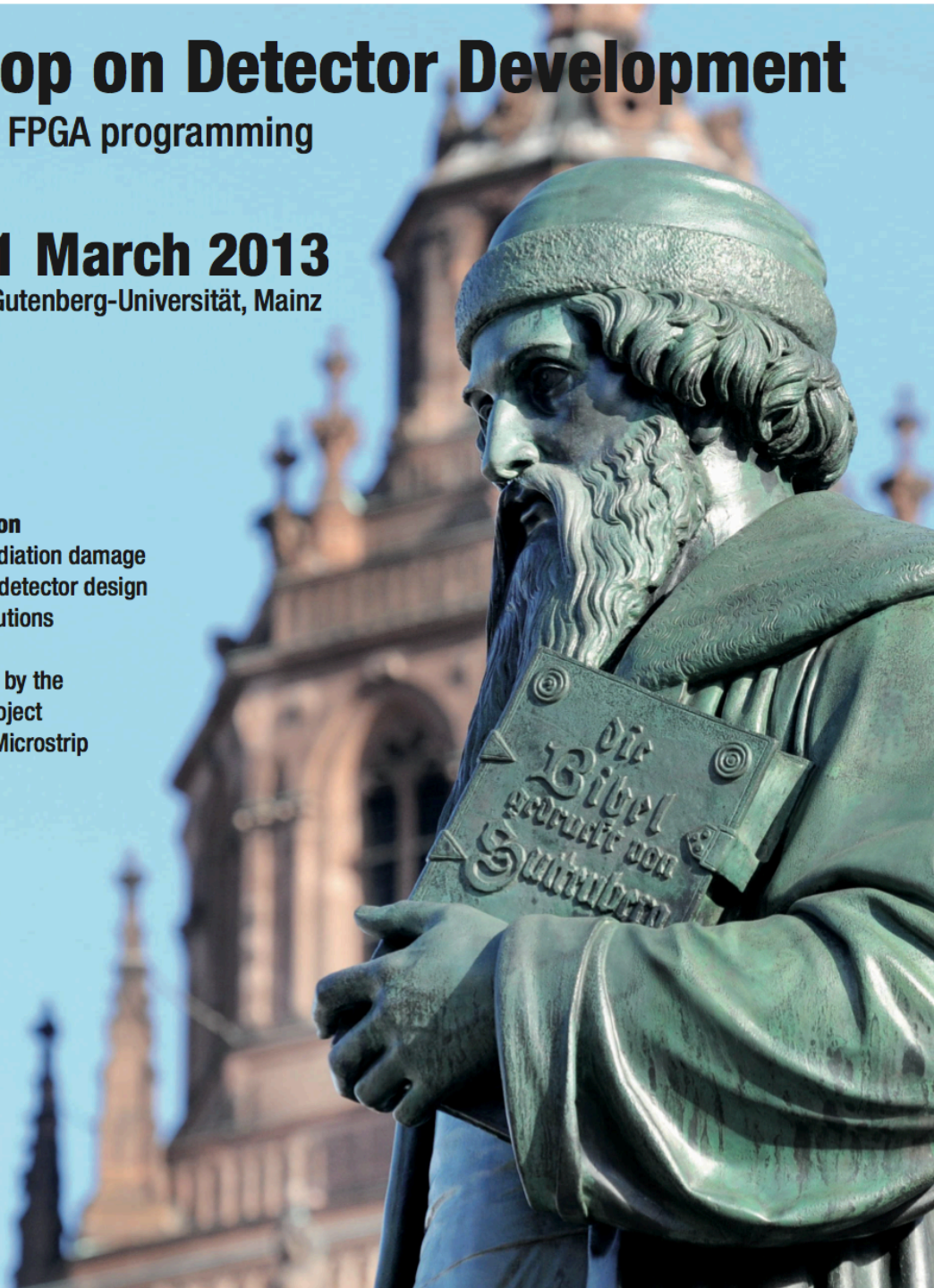
Institut für Physik, Johannes Gutenberg-Universität, Mainz

**26-28 February:**  
**School on FPGA programming**

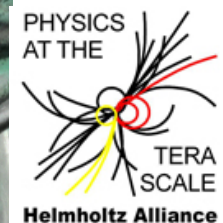
**28 February -1 March:**  
**Workshop with topical sessions on**

- First lessons learned at LHC on radiation damage
- Particle Flow and implications on detector design
- Track triggers: challenges and solutions

The workshop will be accompanied by the first meeting of the new alliance project "Enabling Technologies for Silicon Microstrip Tracking Detectors at the HL-LHC"



JOHANNES GUTENBERG  
UNIVERSITÄT MAINZ



# Welcome to Mainz !

Institut für Physik



# Practical Information

- Registration: please pay your workshop fee!
  - outside of Minkowski room on Tuesday
  - outside of lecture hall C02 on Thursday/Friday
- Wireless access
  - eduroam
    - should work for all participants from Germany
  - Network „winulum“:
    - ask for your personalized access at the registration desk
    - open (any) browser and enter your credentials (login.uni-mainz.de – should appear automatically)
- in case of any questions/problems
  - please contact us (badges with a blue background)



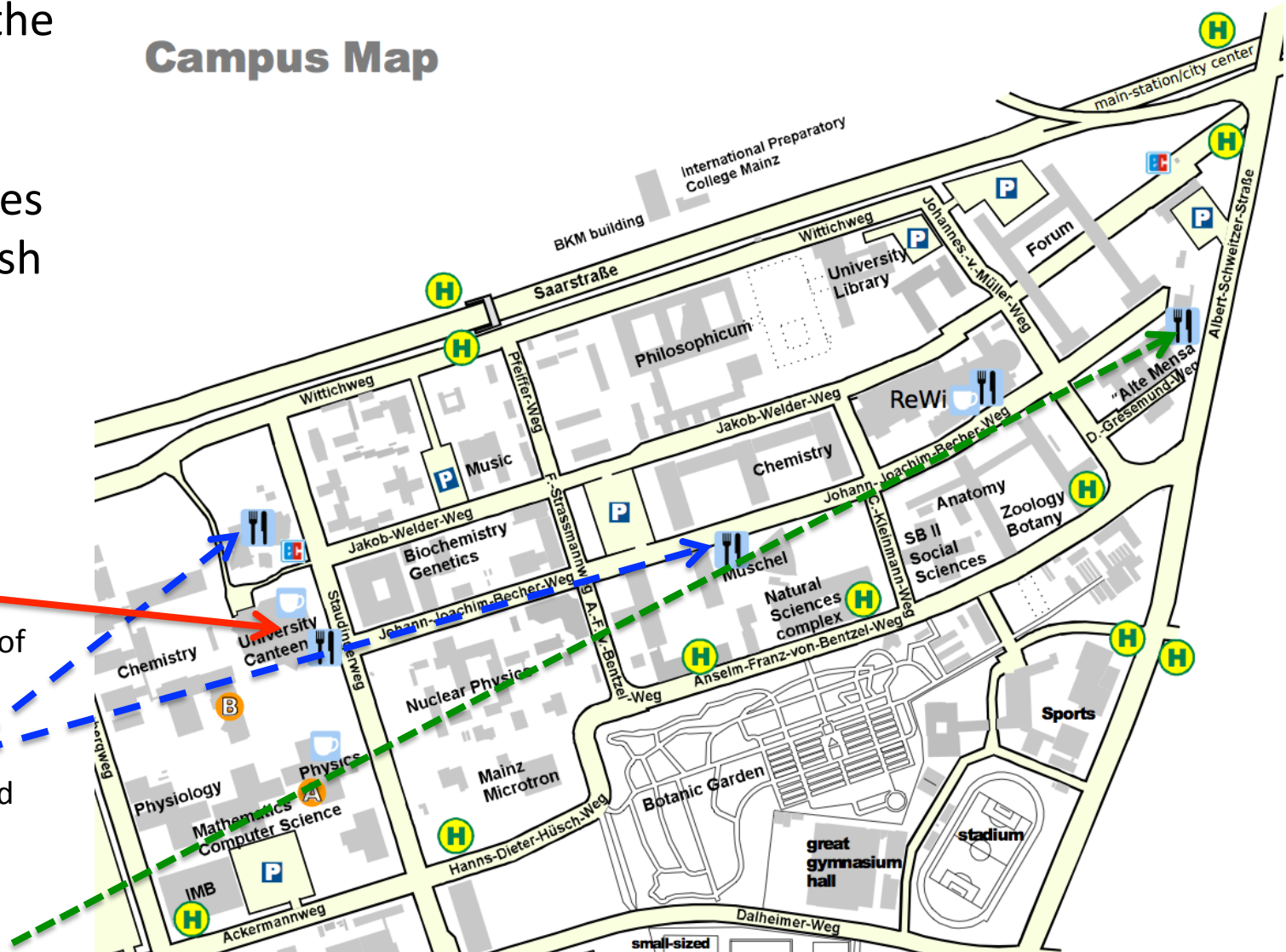
# Lunch options

- please note: the university canteen („Mensa“) does not accept cash

- ordered in terms of distance

- Mensaria
  - top floor of Mensa
- Turkish
  - Döner and more
- Baron Restaurant

Campus Map



Thursday 28 February 2013

<b>FPGA school part IV</b> (09:00 ->13:00)	
09:00	Lecture on Embedded Systems (1h30')
10:30	Exercises (2h30')

<b>Project meeting "Enabling Technologies for Silicon Microstrip Tracking Detectors at the HL-LHC"</b> (09:00 ->13:00)	<i>Lessons learned from design, construction and operation of current LHC tracking detectors</i> <b>Chairperson:</b> Lutz Feld (RWTH Aachen) <b>Location:</b> Johannes Gutenberg-Universität Mainz ( Hörsaal C02 ) <b>Material:</b> <a href="#">Agenda of project meeting</a> <a href="#">Hörsaalgebäude Chemie</a>
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<b>Detector workshop: First lessons learned at LHC on radiation damage</b> (14:00 ->17:10)	<b>Chairperson:</b> Lutz Feld (RWTH Aachen) <b>Location:</b> Johannes Gutenberg-Universität Mainz ( Hörsaal C02 ) <b>Material:</b> <a href="#">Hörsaalgebäude Chemie</a>	
14:00	Welcome (10')	Stefan Tapprogge (Johannes Gutenberg-Universität Mainz)
14:10	Radiation damage to silicon detectors at LHC (25')	Markus Keil (University of Göttingen)
14:45	Latest results from irradiation and testbeam campaigns (20')	Alexandra Junkes (Experimentalphysik)
15:15	Radiation damage in lead tungstate crystals (PWO) used in the CMS electromagnetic calorimeter (20')	Etiennette Auffray (CERN)
15:45	Installation of upgrades: activation and the ALARA principle (20')	Moritz Guthoff (KIT / CERN)
16:15	coffee/tea break (30')	
16:45	Evolution of ATLAS and CMS tracker layouts for HI-LHC (25')	Ingrid-Maria Gregor (DESY)

<b>Detector workshop: Particle flow and implications on detector design</b> (17:20 ->19:00)	<b>Chairperson:</b> Felix Sefkow (DESY) <b>Location:</b> Johannes Gutenberg-Universität Mainz ( Hörsaal C02 ) <b>Material:</b> <a href="#">Hörsaalgebäude Chemie</a>	
17:20	The particle flow concept (25')	Mark Thomson (Cambridge University)
17:55	Performance of particle flow in CMS (20')	Boris Mangano (ETH Zurich)
18:25	Performance of jet measurements in ATLAS (20')	Tancredi Carli (CERN)

<b>Workshop dinner</b> (20:00 ->22:00)	<b>Location:</b> Mainz ( Heiliggeist ) <b>Material:</b> <a href="#">Mailandsgasse 11</a>
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Friday 01 March 2013

<b>Detector workshop: Particle flow and implications on detector design (cont'd)</b> (09:00 ->10:00)	<b>Chairperson:</b> Felix Sefkow (DESY) <b>Location:</b> Johannes Gutenberg-Universität Mainz ( Hörsaal C02 ) <b>Material:</b> <a href="#">Hörsaalgebäude Chemie</a>	
09:00	Validation of particle flow and GEANT4 models (20')	Christian Zeitnitz (University Wuppertal)
09:30	Impact on and optimisation of detector design (20')	Rainer Wanke (University of Mainz)

<b>Detector workshop: Track triggers - challenges and solutions</b> (10:00 ->12:25)	<b>Chairperson:</b> H.-C. Schultz-Coulon (Universität Heidelberg) <b>Location:</b> Johannes Gutenberg-Universität Mainz ( Hörsaal C02 ) <b>Material:</b> <a href="#">Hörsaalgebäude Chemie</a>	
10:00	Motivation for track triggers (25')	Andre Schöning (PI Heidelberg)
10:35	coffee/tea break (30')	
11:05	Ideas and issues for GPU based track triggering (20')	Niklaus Berger (Universität Heidelberg)
11:35	The ATLAS FTK project (20')	Bjoern Penning (University of Chicago)
12:05	CMS plans for a Level-1 track trigger (20')	Duccio Abbaneo (CERN)

# Workshop dinner

- Thursday evening, starting at 20:00
  - map available at registration desk
- Heiliggeist (Restaurant/Bar/~~Biergarten~~)
  - built in 1236 as a hospital church
    - transport by bus
      - bus stop „Friedrich von Pfeifferweg“
        - take any bus until stop „Hauptbahnhof“ (will be the 3rd stop)
        - change at „Hauptbahnhof“ to any of the following bus lines: 54,55,56,57,60,61,71 and get off at the 4th stop „Rheingoldhalle/Rathaus“ – then just a few minute walk
      - bus stop „Staudinger Weg“
        - take bus 69 (the only option, every 15 minutes) until stop „Hauptbahnhof“ (will be the 7th stop)
        - then continue as described above
    - about 20 min. walk from the main railway station
    - about 45 min. walk from here





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# Campus Map

*bus stop „Friedrich von Pfeifferweg“*

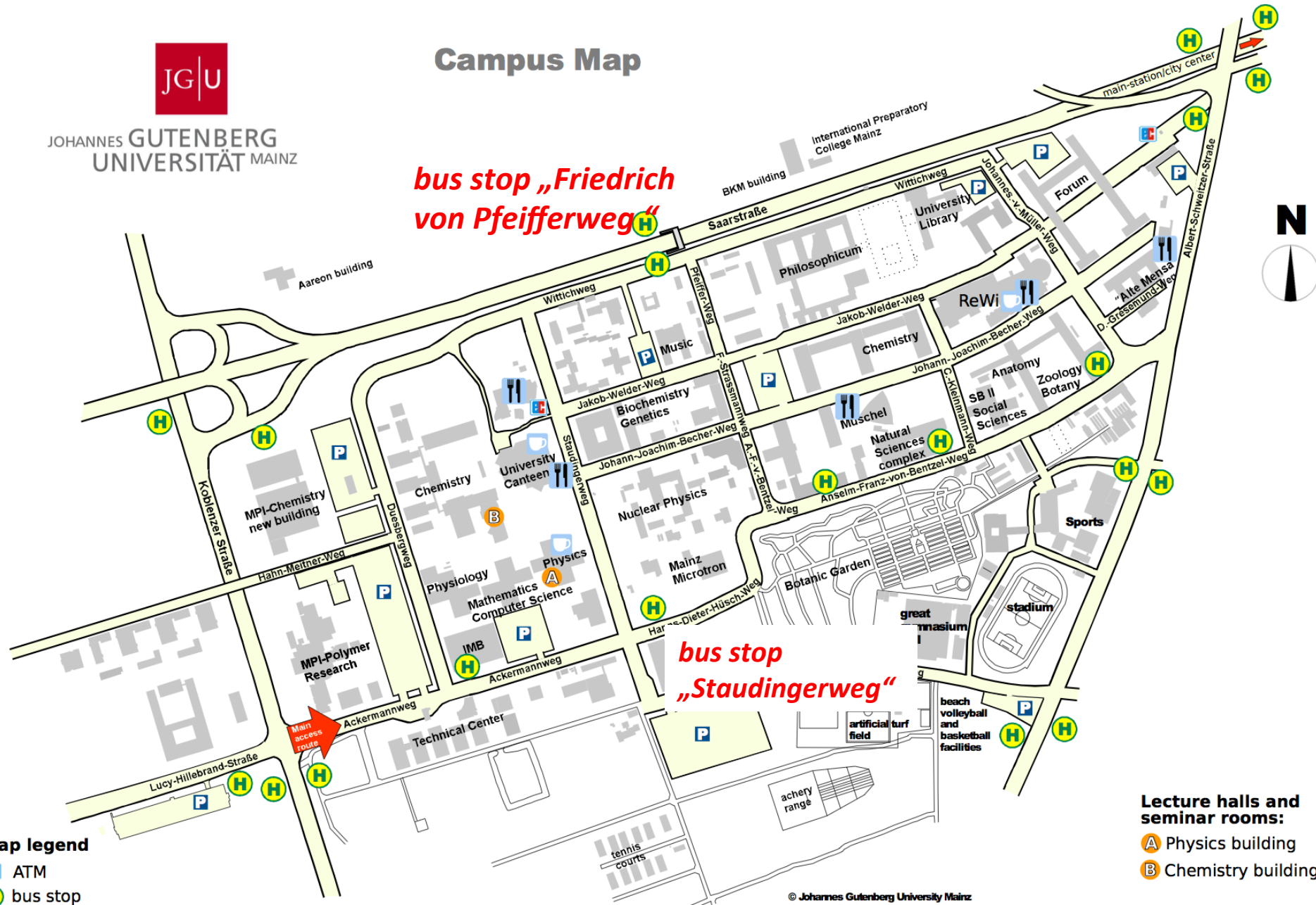
*bus stop „Staudingerweg“*

## Map legend

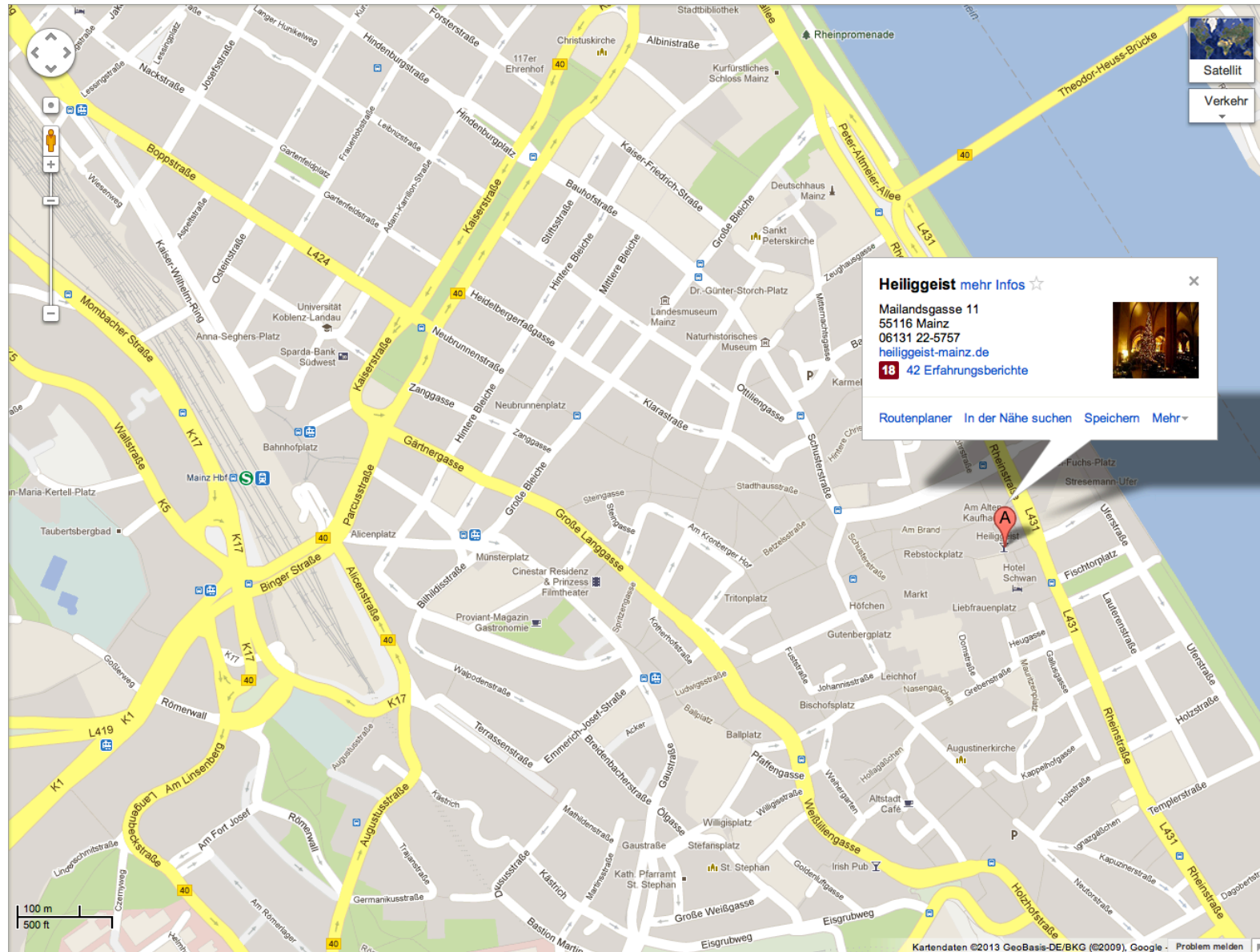
- ATM
- bus stop
- restaurant/canteen
- café

## Lecture halls and seminar rooms:

- Physics building
- Chemistry building

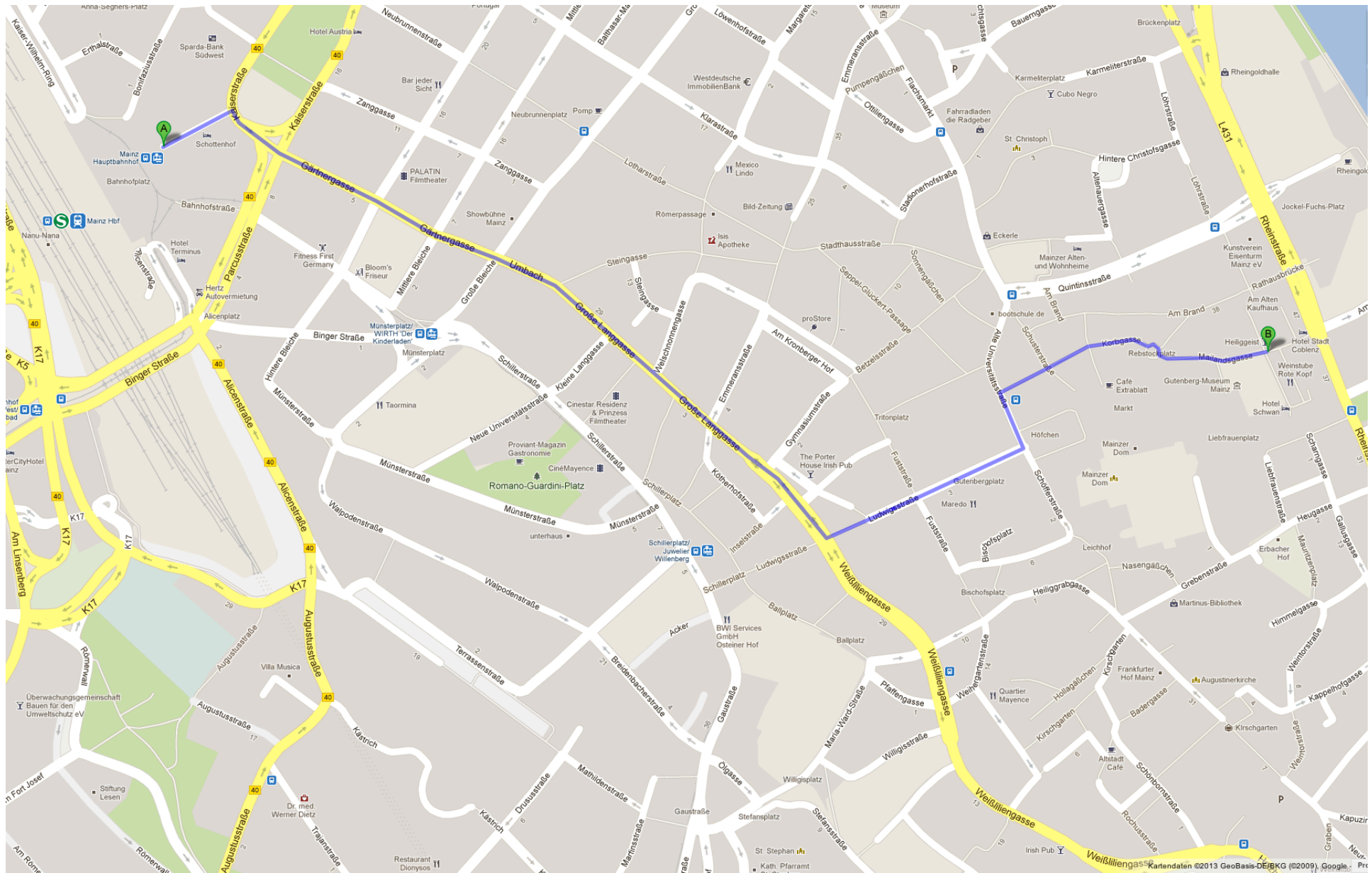


# Location of Heiliggeist





# ... from „Hauptbahnhof“



# ... from „Staudinger Weg“

