

Computing for science, engineering and production:

Mathematical tools for the second industrial revolution

19th International meeting of historic calculating instrument collectors

Berlin, October 11–13, 2013

The location — and why we are there

This year's international meeting takes place in Berlin, capital of Germany and known for its cultural heritage and life. But next to politics and culture, Berlin was and is shaped by industries. Starting with the railways and continuing with the industrialization in the 19th century Berlin became a place for factories of all kinds. It exploded both in area and population. The second industrial revolution made Berlin the largest industrial city in central Europe before World War II. And it wasn't just production plants, but many facilities for research and development. Famous names like Borsig, Siemens, and AEG stand out as examples, but there were many, many more. All that was not possible without the right people and the right tools, and this is led both to the theme for IM2013 you read above, and to the actual place of our annual conference.

The meeting takes place near the Technical University, at the residence of the oldest German student union of engineering students, called *Akademischer Verein Hütte*. It was founded in 1846 by students of the precursor of the Technical University, and it was quite influential in shaping the engineering profession in Germany in the 18th and early 19th century: Not only that members of the *Hütte* founded the German Engineering Association, the *Verein Deutscher Ingenieure*, or VDI for short, but they embarked on a publication project, which had an even more profound effect: In 1857 *Hütte* published the first edition of *The Engineer's Handbook*, its title page shown on the right side. This pocket book evolved over the next hundred years into a multi-volume encyclopedia of engineering data, a compact summary of the state of the art and “technical bible” for the professional engineer with its collection of formulae, tables, and drawings. There were also spin-off volumes for particular needs, like the *Betriebshütte*, or the *Stoffhütte*, as well as foreign language editions. The current 34th edition of the base volume appeared in 2012 as a fat book of nearly 2000 pages. For generations of university educated engineers, the German *Diplom-Ingenieur*, these books defined the professional standards of their time and were indispensable for their work. For nearly everybody, *Hütte* became the name of these books, and the student union was and is virtually unknown. Today, the many editions offer an unforeseen benefit: As they trace the technological developments with hard data, they allow us, the collectors and researchers of calculating instruments, to understand the historical computational needs, and thus our instruments, like special purpose slide rules, their actual use, and evolution.



Conference site: **Akademischer Verein Hütte e.V., Carmerstraße 12, 10623 Berlin**

Preliminary Programme of IM2013

Friday, 11 Oct 2013

- 13⁰⁰ Start of registration, informal gathering
- 14⁰⁰ – 16³⁰ first session of the conference
- 17⁰⁰ – 18³⁰ exposition and swap market
- 19³⁰ dinner at *Filmbühe am Steinplatz*, with an after-dinner presentation

Saturday, 12 Oct 2013

- 09⁰⁰ – 11⁰⁰ second session of the conference
- 11³⁰ – 13⁰⁰ third session of the conference
- 13⁰⁰ – 14⁰⁰ lunch, provided on site
- 14⁰⁰ – 16⁰⁰ fourth session of the conference
- 16³⁰ – 18⁰⁰ fifth and last session of the conference
- 19⁰⁰ move to evening programme site
- 19³⁰ conference dinner at historic power station *Altes Kraftwerk Moabit*

Sunday, 13 Oct 2013

- 10⁰⁰ meeting at *Deutsches Technikmuseum*
- 10³⁰ – 11⁰⁰ introductory talk by Prof. Horst Zuse
- 11⁰⁰ – 12⁰⁰ guided tour by Horst Zuse of the *Zuse Collection* at the Museum, including a demonstration of his replica of the *Z3-Computer*, destroyed in WWII, which was the first working programmable digital electronic computer (1941)

Speakers and their subjects

- Klaus Kühn: On the calculation of logarithms
- Wolfgang Irlner: Logarithms and adding devices
- Stefan Weiß: A slide rule for a combinatorial problem: Munyay's exchangable gears indicator
- Jorge Nuno Silva: The collection of calculating devices at the Museum of Science of Lisbon
- Werner Rudowski: The 1893 exposition of mathematical instruments and demonstration models
- Renate Tobies: Industrial mathematics in Germany in the early 20th century
- Karl Kleine: AWF special purpose slide rules
- Ed Chamberlain: Barth and his machine time slide rules
- Günter Kugel: Providing gas and water for the masses: Computing the pipes
- Klaus Krämer: Let there be light! Planning electrical illumination using a slide rule
- Erhard Anthes: Albert Rohrberg, teacher of the slide rule
- Jerry McCarthy: The Schumacher slide rule
- Jose Fernández: The Wichmann R.R. Py-Ro slide rule "für Eisenbahnlandmesser"
- Günter Lattermann: "Celluloidpest" and "KERCS" — the chemistry of rotting slide rules
- David Rance: Engineers in tights — textile slide rules
- Peter Holland: *Arbeiter brau(ch)en Bier*: Brewery slide rules
- Barbara Haeberlin: The Industrialization of Democracy

We are pleased to have a special guest speaker in our programme, Prof. Horst Zuse, son of Konrad Zuse, the inventor of the first working programmable digital computer. He will report firsthand of the origins of modern computers on Friday evening — and that's not all technical — and will give us a personal guided tour of the *Zuse Collection* at the *Deutsches Technikmuseum* on Sunday.

Conference languages

The primary language of the conference is English. Some of the talks will be given in German. However, all viewgraphs of the presentations will be in English, and English summaries will be provided as needed.

Proceedings

The IM2013 proceedings will be a bound book, included in the registration package for each participant. Additional copies will be for sale at the conference, as supplies last. Please indicate on the registration form, if you want additional copies.

Partner programme

Arranging a partner programme in Berlin is difficult — there are much too much alternatives. So we decided on a base programme with maximal flexibility: Partners meet at 9³⁰ on saturday, take a short walk to Kürfürstendamm, and embark there on a bus ride. This is a sightseeing tour, which circles town on a 2½ hours tour, along the most notable points of interest. At 20 of these you can hop off the bus at and hop on again later. The buses run at a 10 minutes interval. Our tour guide will be Anne Krämer, and depending on the wheather and your interest the bus tour will be interrupted and resumed according to the situation and your pleasure. Berlin is so much loaded with history in all respects, but at the same time it is a very modern and dynamic place, so that such a tour can give you just a bit of all, at your own choice. Also the wheather plays a role. Therefore, we have not fixed a proposal for the day — you will get a proposal for the stops and visits just when you arrive on friday. The sightseeing bus ticket actually is a two day ticket, so you can explore the city on your own already on friday afternoon, or on sunday.

Travelling to and in Berlin

Coming by airplane

From Tegel airport (TXL), take the X9 express bus to Zoo station, its final destination. You can also step off one stop earlier, at U-Bahnhof Ernst-Reuter-Platz, if your hotel is closer to it. Check the map!

Coming by train

Long distance trains no longer serve Zoo station. From central station (*Berlin Hauptbahnhof*) or other terminus proceed by S-Bahn or regional train to Bahnhof Zoo. The destination on your train ticket should be *Berlin Zoologischer Garten* or *Berlin Stadtbahn* to include this last part of your journey.

Coming by car

Take autobahn exit *Messegelände* and drive down Kantstraße. Please note that Carmerstraße is a one-way-street, running from Saviny-Platz to Steinplatz. Finding a parking place around the conference site and near the hotels is difficult. Not only that, the whole area is metered resp. reserved for locals and well patrolled by eager traffic wardens. Short parking is possible, but it's not avisable for a longer period. Free parking is available on the Straße des 17. Juni and its side lanes between the two main parts of the campus of the Technical University, marked ⑦ and ⑧ on the map on page 4.

Travelling in Berlin

On saturday, we will have our conference dinner at a historic power station. It is a four stop ride on the underground from Zoo station. On sunday, we go to the Technikumuseum, also by underground. You might use a taxi or your own car, but we strongly advise to go as a group by public transport. As both excursions have an open end, we propose the use of individual special price 4-ride-tickets offered

by the Berlin public transport authority BVG. To avoid queues we can preorder them. Please mark on your registration if you want such a ticket.

If you are staying longer in Berlin, you can also use several variants of tourist tickets. They are offered as day ticket, as 48- or 72-hour ticket, or as 5-day-ticket, and are available at the BVG ticket office at Zoo station. They are valid on all busses, the underground and S-Bahn.

Accommodation and map of the area

① Akademischer Verein Hütte e.V.

address Carmerstraße 12
conference site

② Filmbühne am Steinplatz

dinner and evening programme on friday

③ Hotel Carmer16

address Carmerstraße 16
phone +49 - 30 - 311 00 50 - 0
email info@hotel-carmer16.de
www <http://www.hotel-carmer16.de>
IM2013 83€ single / 95€ double, incl. breakfast

④ Hotel Heidelberg

address Knesebeckstraße 15
phone +49 - 30 - 313 01 03
email info@hotel-heidelberg-berlin.de
www <http://www.hotel-heidelberg-berlin.de>
IM2013 59€ single, 75€ double, plus 8.50€ p.P. breakfast

⑤ Hotel Indigo

address Hardenbergstraße 15
phone +49 - 30 - 860 90 90
email reservierung-west@hotelindigoberlin.com
www <http://hotelindigoberlin.com>

⑦ Campus of the Technical University

⑧ free parking area on Straße des 17. Juni

⑥ Hotel Motel One Berlin Ku'Damm

address Kantstraße 10
phone +49 - 30 - 315 17 36 - 0
email berlin-kudamm@motel-one.com
www <http://www.motel-one.com/de/hotels/berlin/hotel-berlin-ku-damm>

note: postal code for all addresses is 10623

Unfortunately, we can't have all participants in one hotel. For hotels ③ and ④ we were able to reserve blocks of rooms at special rates (reservation code IM2013), and we recommend two more. Berlin has many more places to stay, but in fall it is often difficult to get suitable ones near the place you want to be. So you'd better book your place soon!



Costs and further information

The conference fee of 120€ covers all programme sessions and their organization, proceedings, saturday's lunch on site, snacks and refreshments, as well as entry to the museum on sunday. Dinner on friday evening is on an individual basis. The saturday conference dinner costs 25€, beverages will be extra. The partner programme is 22€ for the bus; all other expenses are on your own, due to the flexible individual nature of this year's partner programme. The BVG four-ride-ticket will be 9€.

Please see the separate registration form for details of the registration process. You can find all IM2013 information on the web page <http://www.fh-jena.de/~kleine/im2013>. Direct any questions about local issues to klaus.kraemer.berlin@t-online.de, and others to kleine@fh-jena.de.