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New and old role models

Lise Meitner professors at LTH 2025–2028: Carolyn Beck, Department of Automatic Control, and Codina Cotar, Department of Mathematics. Photo: Kennet Ruona

At the Lise Meitner seminar 2025, two new Lise Meitner professors were introduced, while the main lecture looked back on 100 years of female excellence in the field of Automatic Control.

Professor Carolyn Beck

Carolyn Beck is a professor at the University of Illinois and an expert in control theory and dynamic systems over networks, with applications ranging from epidemics and financial risks to energy systems.

Her research is connected to AI, digitalisation and the energy transition. She is an elected IEEE Fellow (Institute of Electrical and Electronics Engineers) and the current President of the IEEE Control Systems Society. She is also deeply engaged in teaching, outreach and advancing diversity in engineering.

– I hope to serve as a role model, and to connect people with other role models. I want to make young people in the field learn how their research community works, and I hope I can be an extra mentor for them, she says.

Carolyn Beck was at LTH thirty years ago, working with Charlotta Johnsson among others.

– I have a warm and sentimental feeling for Lund, and I’m happy to be back.

Professor Codina Cotar

Codina Cotar is a professor at University College London and an expert in probability theory, mathematical physics and analysis. She is internationally recognised for connecting deep mathematical methods to fundamental problems in physics, chemistry and engineering.

She says she loves problems in mathematics and physics. Is there a favorite problem for her?

– I'm interested in how to use mathematics in physics, such as in Quantum Mechanics. For instance, how the behavior of electrons influences the physical systems around us.

She is also an active mentor, advocate for diversity, and organiser of high-profile international research events.

– There are not a lot of women in mathematics. I hope to serve as a role model for the few there are. It's always great to see young women who weren't confident graduate and become proud professionals, says Codina Cotar.

Codina Cotar is also a hat designer. How did she get into hats?

– I come from Bucharest and it gets really hot there in the summer. Most hats in shops looked the same, so I started to experiment and design them myself. The hats are made for me in Bucharest by a wonderful hat maker.

At home, she has more than a hundred and fifty hats.

– I have some quite intricate ones with tentacles and butterflies, but for today I have chosen something simpler that I thought would fit the occasion.

100 years of female excellence in automatic control

Have you heard of Sofya Kovalevskaya, Irmgard Flügge-Lotz and Françoise Lamnabhi-Lagarrigue? If not, you should check out the project *Historical Female Influencers in Automatic Control* (Automatic Control's website). The main lecture of the Lise Meitner seminar offered a glimpse into the fascinating careers and life stories of these women.

Sofya Kovalevskaya

Sofya Kovalevskaya (1850-1891) was a prodigy in school who spoke four different languages from an early age and loved math. However, she could not go to university since it was forbidden for women in Russia at the time. She had to arrange a fake marriage to be able to go to Germany where she became the first woman to receive a PhD in mathematics.

Despite many obstacles to having an academic career at all, she ended up being one of the biggest names in math, making important contributions to the theory of partial differential equations, an essential part of Automatic Control. Kovalevskaya became Professor of Mathematics at Stockholm University in 1889 but died two years later of pneumonia.

Irmgard Flügge-Lotz

Fifty years after Kovalevskaya, a lot had changed. The 1920s–70s was “the golden age of Automatic Control” according to Professor Margret Bauer, and this was the period in which Irmgard Flügge-Lotz (1903-1974) lived and worked. Still, as a female civil engineer in a male-dominated field, she had to struggle and be very persistent to reach her goals.

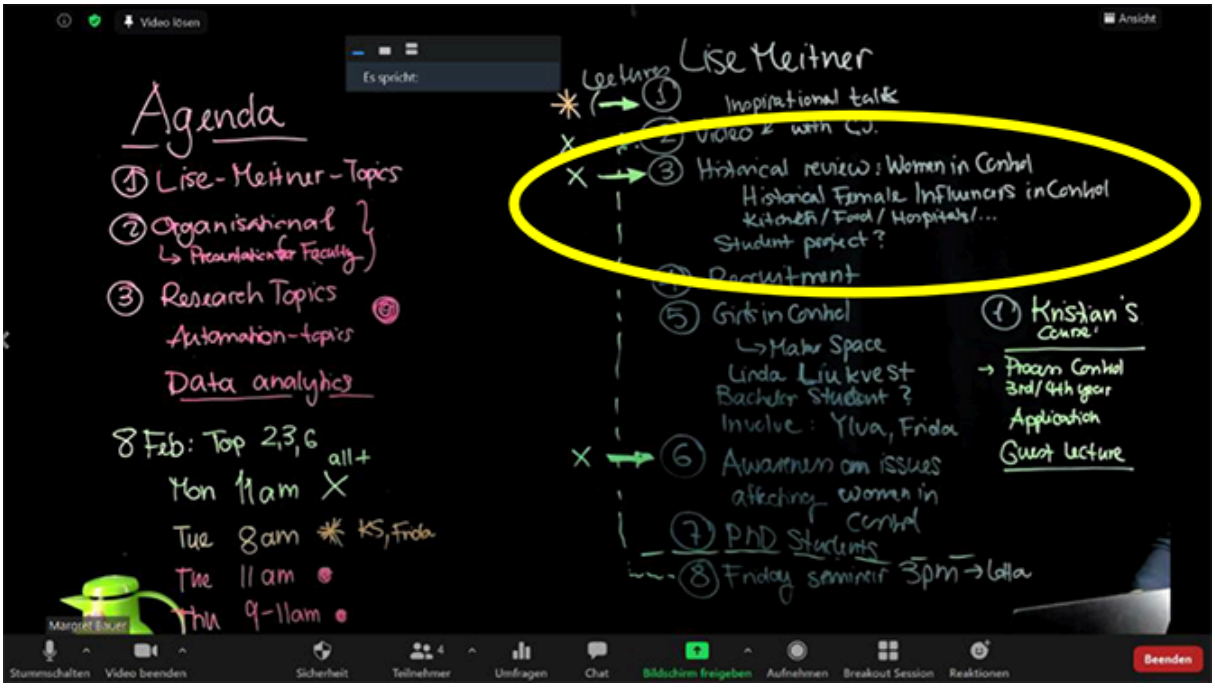
Flügge-Lotz is particularly known for her advancements in aviation – the spanwise lift distribution of an airplane wing known as the Lotz method – and the development of the on/off control. She became the first female professor of engineering at Stanford University in California.

Françoise Lamnabhi-Lagarrigue

Another fifty years on, and we are in contemporary times. Professor emeritus Françoise Lamnabhi-Lagarrigue (born 1953) is a French mathematician working in the field of Automatic Control since the 1980s. She is best known for her theoretical advances in analysing and controlling complex nonlinear systems and their application in power and neural networks.

She has often emphasised the importance of communication, collaboration and networking, building relationships between European research groups within nonlinear control. Among other things, she founded the European Embedded Control Institute (EECI), which offers a wide range of training programs in Automatic Control for PhD students worldwide.

The project and the exhibition



Professor Margret Bauer's notes after a brainstorm session, including the embryonic idea for the "Historical Female Influencers in Automatic Control" project.

Historical Female Influencers in Automatic Control was an early idea during Margret Bauer's time as a Lise Meitner professor (2021–2024). The idea was to shine a light on some of the well-known, less known and perhaps even forgotten female stars in Automatic Control and tell their stories.

By interviewing people in the field, Margret Bauer, Professor Charlotta Johnsson and Eva Westin gathered material for portraits of nine women, for the web and for a physical exhibition. The project is ongoing and they have traveled the world with it and lectured in places like Japan, USA, Latin America and Europe.

Next chapter of the project is the female Automatic Control engineers of the future. Interviews are underway, investigating the hopes, ideas and aspirations of young female students and professionals.

Reading tips

Historical Female Influencers in Automatic Control (Automatic Control's website).

LTH staff spread knowledge about the importance of role models – Professor Charlotta Johnsson's and Eva Westin's visit to Mauritius

Also on the Lise Meitner seminar 2025

Lise Meitner seminar on role models

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