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Uppsala



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Uppsala University

- International research frontiers
- Interdisciplinary campus areas
- Living cultural settings
- High ranking in education, research and internationalization
- Active cooperation with business and community
- Oldest university in the Nordic countries - founded in 1477





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Uppsala University in figures

- Oldest university in the Nordic countries
- founded in 1477
- Education and research across three disciplinary domains
- Nine faculties
- 6,000 employees - including 4,000 teachers/researchers
- Turnover 4300 million SEK - 70% of which for research and graduate education





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Nine faculties

- Arts
- Educational Sciences
- Languages
- Law
- Medicine
- Pharmacy
- Science and Technology
- Social Sciences
- Theology





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Campus Areas

- Ekonomikum
- English Park Campus
- Centre for Evolutionary Biology
- Geo Centre
- Teacher Training
- Centre for Information Technology
- Rudbeck Laboratory
- Uppsala Biomedical Centre
- Ångström Laboratory





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Research in figures

- 4,000 teachers and researchers
- 500 professors – nearly 20% women
- 5,000 academic publications per year
- 3,000 international collaborative research agreements
- 2,000 doctoral students
- 400 doctorates every year
- 100 licentiate degrees every year
- 50% of research is funded by external sources





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Education in figures

- 40,000 undergraduate and graduate students \approx 20,000 full-time students
- 50 programmes for beginners and 45 master programmes
- 2,000 single-subject courses
- 4,000 undergraduate and graduate degrees every year
- 2,000 doctoral students
- Student exchange programmes with 500 universities in 50 countries





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Some Uppsala profiles



Jacob Ulvsson



Carolus Linnaeus



Olof Rudbeck, Sr.



Anders Celsius



Nils Rosén



Erik Gustaf Geijer



Betty Pettersson



Ellen Fries



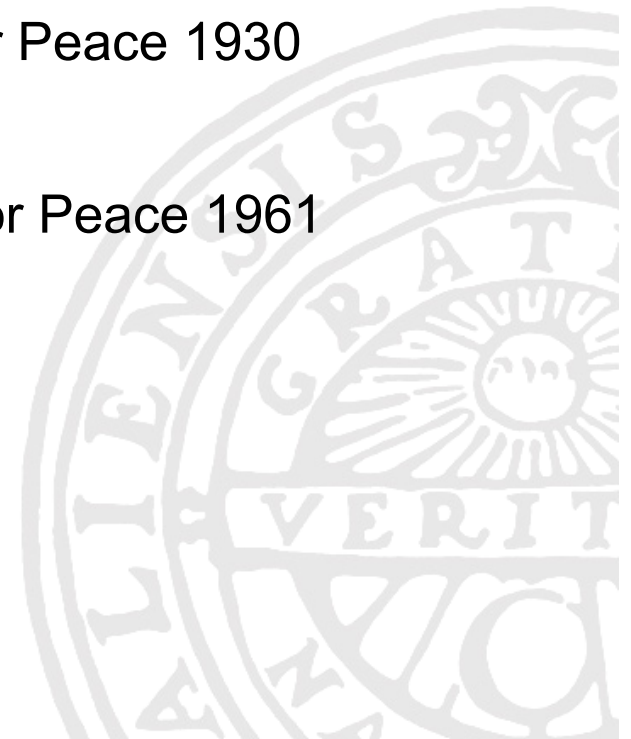
Gerd Enequist



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Nobel Laureates

- Allvar Gullstrand - Physiology and Medicine 1911
- Robert Bárány - Medicine 1914
- Manne Siegbahn - Physics 1924
- The Svedberg - Chemistry 1926
- Nathan Söderblom - Nobel Prize for Peace 1930
- Arne Tiselius - Chemistry 1948
- Dag Hammarskjöld – Nobel Prize for Peace 1961
- Kai Siegbahn - Physics 1981





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Engineering Sciences (Part of Ångström Lab)





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Research Divisions

- **Electricity**
 - Electron Microscopy and Nanoengineering
 - Solid State Electronics
 - Solid State Physics
 - Solid Mechanics
 - Ion Physics
 - Materials Science
 - Nanotechnology and Functional Materials
 - Ångström Space Technology Centre
 - Signals and Systems Group



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Selected Research areas in Engineering sciences

- Advanced instrumentation and measurements
 - Electromagnetic Compatibility**
 - Generation - rotor, stators and turbines
 - Power Electronics
 - Magnetic Materials
 - Microwave Engineering
 - Signal Processing
 - Solar Cells
 - Applied plasma
 - Marine current power
 - Hydropower
 - Wind Power
 - Wave power
 - Wireless Sensor Networks
 - Lightning Research**

More areas at <http://www.teknik.uu.se/forskning/index.php?lang=en>

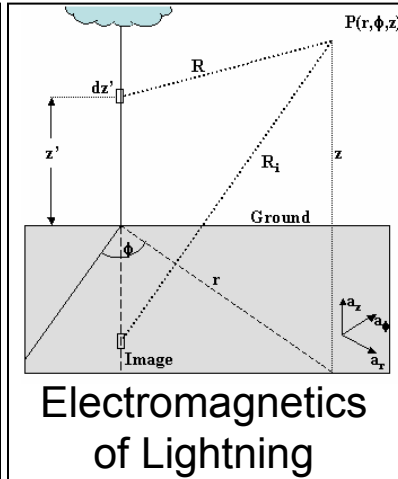


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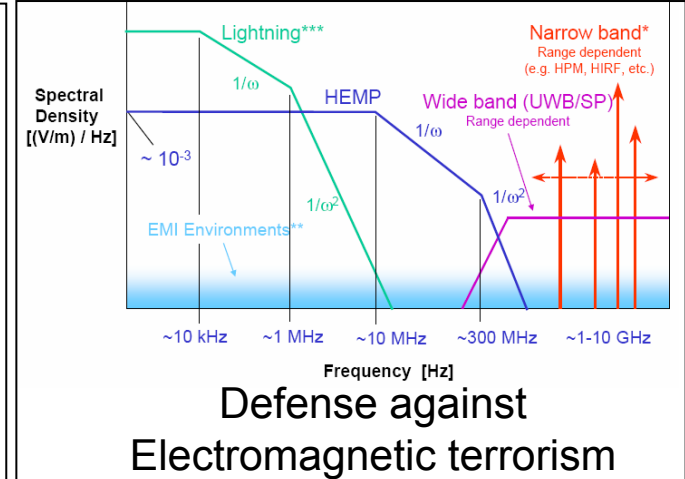
Electromagnetic Compatibility



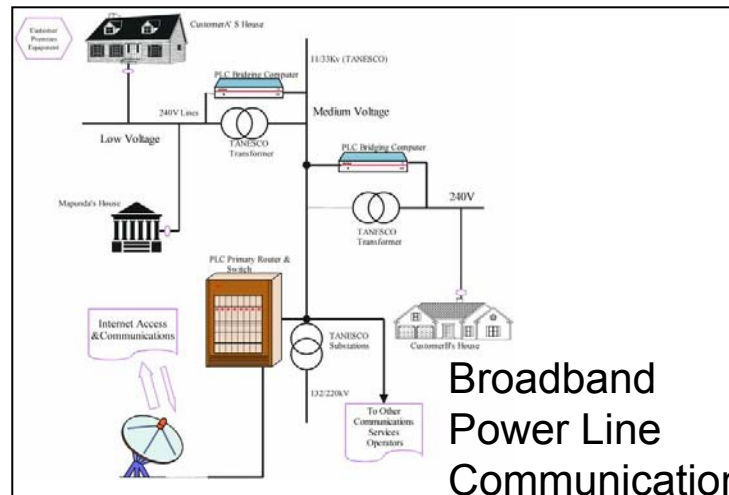
Lightning interaction
with tall structures



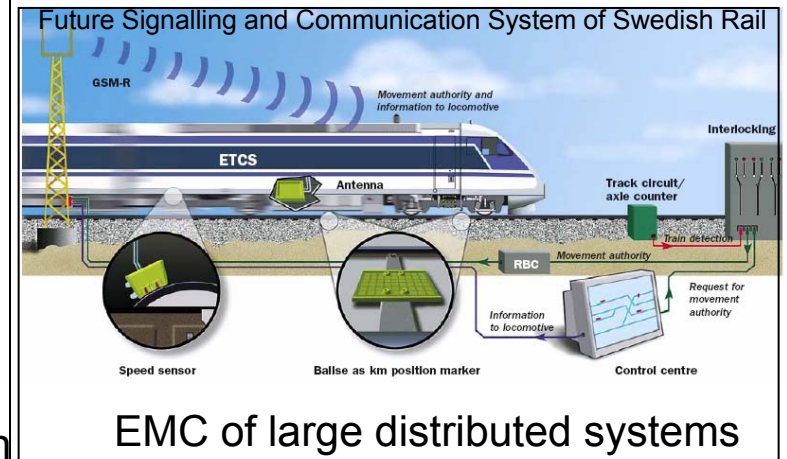
Electromagnetics
of Lightning



Defense against
Electromagnetic terrorism



Broadband
Power Line
Communication



EMC of large distributed systems

Initiative: EU COST P18 – Physics of Lightning Flash and Its Effects
(www.costp18-lightning.org)



Project areas we want to give first preference (Asia – UU mobility)

- **Electronic attack (including IT security)**
 - Partner in another EU project on vulnerability of critical infrastructures (power, railways, etc.) to high intensity radio frequencies
 - **Electromagnetic interference**
 - Involved in projects with Swedish Railway authority, Bombardier Transportation
 - **Lightning phenomenon**
 - Collaborative projects with partners in Austria, Switzerland, and USA
- Next page**



Asia – UU mobility

- **Broadband power line communication**
 - For communicating with near-shore wavepower generating plants using power cables
- **Renewable energy**
 - New generation schemes (from waves, wind, marine flow etc.), grid connection schemes

Possible to define projects at UG, PG, Ph.D., Post-doc, faculty level



UU-Asia mobility (some ideas)

- Socio-economic-technologic impact of renewable energy in India, especially TN (e.g., impact of wind energy farm in rural TN. Team up with MSW students at Amrita?)
- Why regional disparities in renewable energy utilization? (e.g., TN and Kerala)
- Power electronics



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