



Microwave theory, March 20, 2017

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Electrical and information technology

Microwave theory

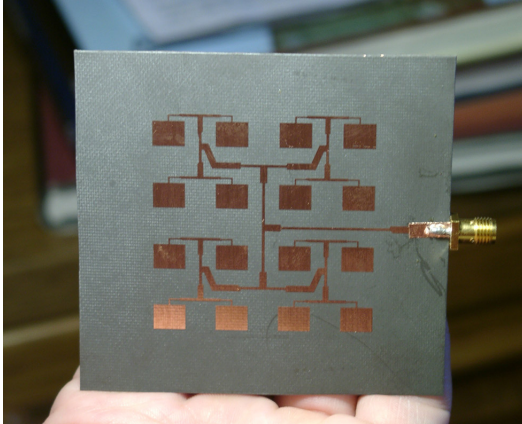
Electromagnetic waves guided along structures.

Transmission lines

Telephone tower in Stockholm 1890 with 4000 lines.



Transmission lines



Waveguides

Waveguides in particle accelerators



MAX IV laboratory

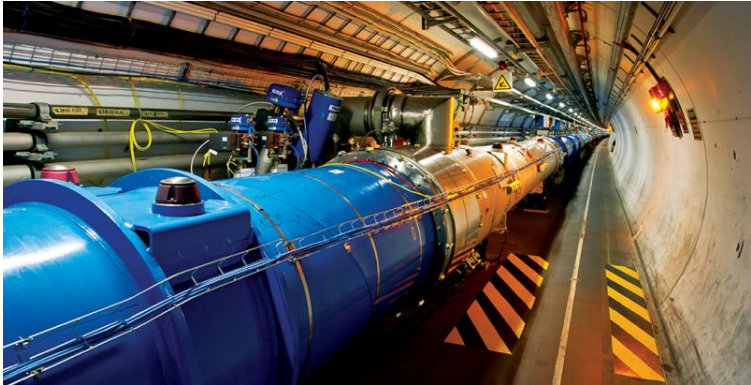


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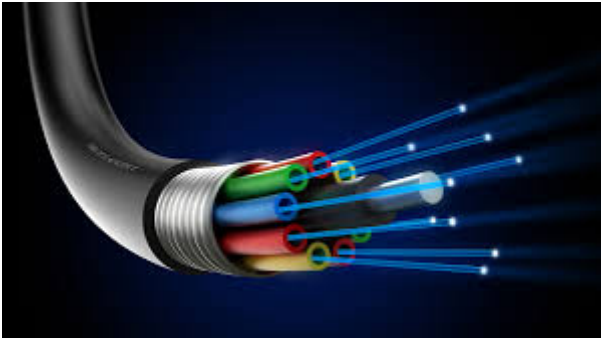
Waveguides and cavities

Large Hadron Collider



LHC!

Optical fibers



Homepage

All information is on the course home page <http://www.eit.lth.se/>

Examination

- ▶ Hand in problems. Three assignments.
- ▶ Project. Written report and oral presentation.
- ▶ Oral exam for grades 4 and 5.

Assignments

The assignments should be solved individually. You are allowed to

- ▶ discuss the problem with others
- ▶ ask the teacher (Anders) if you get stuck

You are not allowed to copy solutions!

Project

- ▶ Groups of two students (or, if needed three or one).
- ▶ All students have to contribute to the project.
- ▶ All students have to take part in the oral presentation of the project.
- ▶ Discussions with the teacher (Anders) are recommended.

COMSOL Multiphysics 5.2

- ▶ Finite element method program
- ▶ Installed on most of the computers in the basement of the E-building
- ▶ Install it from LDC. See information on homepage
- ▶ Introduction to COMSOL at 15-17 Tomorrow, Tuesday March 21, in E4119.