# Training ASMPT

## Program session 1

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# Program session 1

1. Introduction of participants
2. Some remarks about the training
3. Explanation of the course program (poster)
4. SLiCAP
5. A short test of basic knowledge
6. Next week

# Introduction participants

1. Anton Montagne
2. Chenyan Zhang

## Electronics Design Training Course - Participants

ASM

- Singapore: ATS - x6
  1. Kei Sheng,
  2. Wenbin,
  3. Woon,
  4. Greggy,
  5. Dinesh,
  6. Victor
- Chengdu: ATC - x3
  1. Xulong,
  2. Mengyang,
  3. Changbin
- Hong Kong: ATHK – x7
  1. Long,
  2. Calvin,
  3. Adrian,
  4. Gary,
  5. Edward,
  6. CK,
  7. Tam

# Some remarks about the training: goal, method and execution

1. Goal:
   Combine a short time to market with high-quality designs.
2. Method:
   Hierarchically structured design process based on a solid practical and theoretical base.
3. Execution:
   1. 1pm - 6pm HK time (7am - 12am CET time)
   2. Breaks 15 minutes each hour (4x)
   3. If possible, participants login personally (own laptop)
   4. All participants are encouraged to ask questions or make remarks on the chat or through audio.

# Some remarks about the training: program

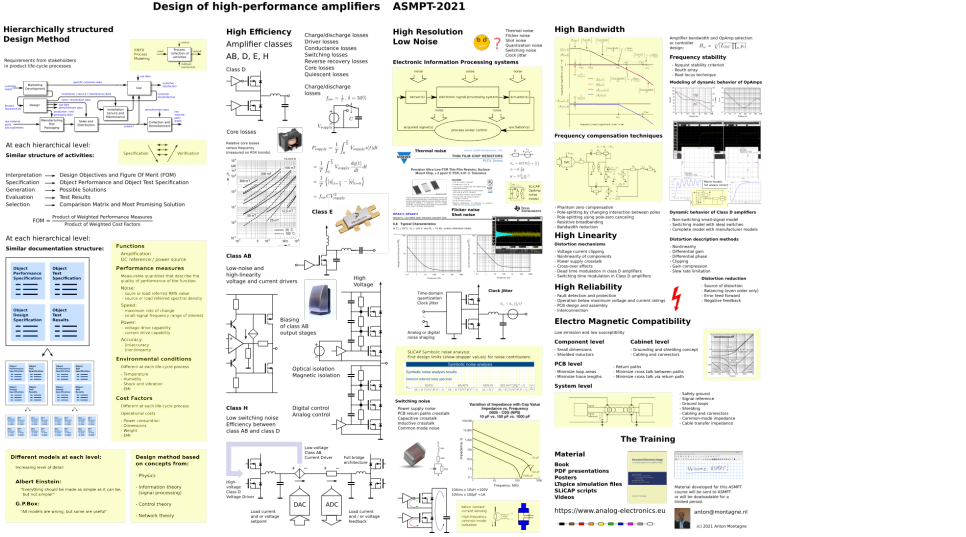
1. Some of you have presented some challenging designs
2. Some of you have commented on the initial course program
3. I have put it all together in a program I am able to offer
4. If things turn out to be:
   - Too simple
   - Too difficult
   - Too much
   - Too little
   - Too fast
   - Too slow
   - Irrelevant
5. Please give me feedback so we can adjust the program!

# Course material

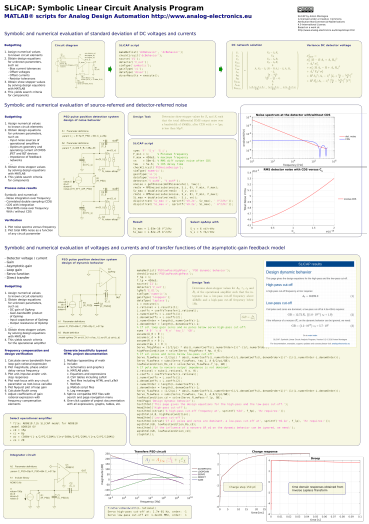
https://analog-electronics.eu/Homologation/courseWebSite/index.html

1. Presentations (PDF)
2. Links to YouTube video recordings from TUD lectures
3. Dowloads:
    1. Posters
    2. LTspice schematic files, netlist files and library files
    3. SLiCAP scripts
4. Xournal white board
5. Sessions will be recorded by ASMPT

# Poster presentation



# SLiCAP




- Deriving and solving design equations
  - Symbolic small-signal (AC) analysis
  - Symbolic noise analysis
  - Symbolic DC and DCvariance analysis
  - Numeric pole-zero analysis
  - Extensive built-in plot capabilities
  - Generates HTML design reports
- SPICE-like netlists as input
- Python script language
- Compatible with Jupyter notebooks
- Uses Maxima CAS

# Poll

1. Each participant: Please let me know on the chat:
   1. You are very sure about the answer
   2. You selected the answer you think that was best
   3. You don't know how to get the answer
2. Polls:
   1. Network theory and estimation of poles and zeros, step responses and Bode Plots of networks without feedback.
      Chapters, 16, 17, 18
   2. Noise in circuits
      Chapter 19
3. How to check the answers with SLiCAP

# Next Week

1. Object Performance Specification, a selection of the following items:
   1. Modeling and characterization of the ideal behavior of amplifiers
   2. Modeling and characterization of port isolation errors
   3. Modeling and characterization of noise in electronic circuits
   4. Modeling and characterization of dynamic behavior / Estimation of poles and zeros
   5. Modeling and characterization of inaccuracy and nonlinearity
   6. Cost factors
   7. Environmental conditions
   8. Safety and reliability
   9. Figure Of Merit
2. Modeling and characterization of operational amplifiers
3. Guided Exercise: Modeling of individual performance apsects of OpAmps
4. Discussion: Apply to specification of ASMPT amplifiers / supplies