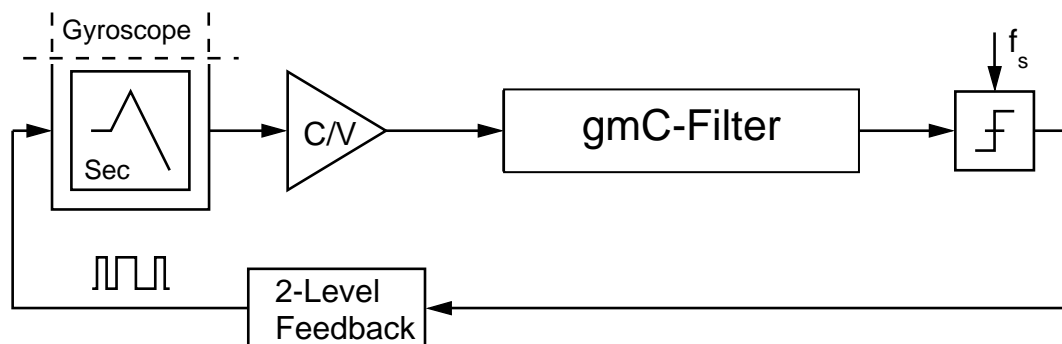


## Bachelor Thesis

# Measurement and Evaluation of a gmC-filter for Electromechanical Delta-Sigma Modulators

In the past 20 years, micro-machined gyroscopes have found their application mostly in the automotive industry. Today, inertial systems are also employed in consumer products, e.g., mobile phones, personal navigation or image stabilization of cameras. To open up this new market, not only have these devices to become cheaper, but also must their power consumption be decreased.

Gyroscopes are frequently read-out by means of a closed-loop system. The Fritz Huettinger Chair of Microelectronics implements these closed-loop systems as electromechanical Delta-Sigma Modulators. In order to further reduce the area and power consumption of the associated filter, the aim is to implement these filters as gmC-filters.



The focus of this thesis will be put on an implemented gmC-filter. Measurements are to be performed and compared to simulation results produced in the design phase of the system. At the end, it is to be evaluated whether the gmC-filter may be applied as a loop-filter in an electromechanical Delta-Sigma Modulator.

### What we expect:

Interests in electronic circuits, willingness to familiarize with the topic and the needed measurement equipment, well documented work, and teamwork.

### What we offer:

Intensive supervision of the thesis, nice work environment in a teamwork, latest simulation software tools, electronic design automation tools, excellent lab equipment, and free space for own ideas.

**Starting Date:** As soon as possible

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