



NPTEL ONLINE CERTIFICATION COURSES

DIGITAL CONTROL IN SMPCs AND FPGA-BASED PROTOTYPING

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Module 03: MATLAB Custom Model Development under Digital Control

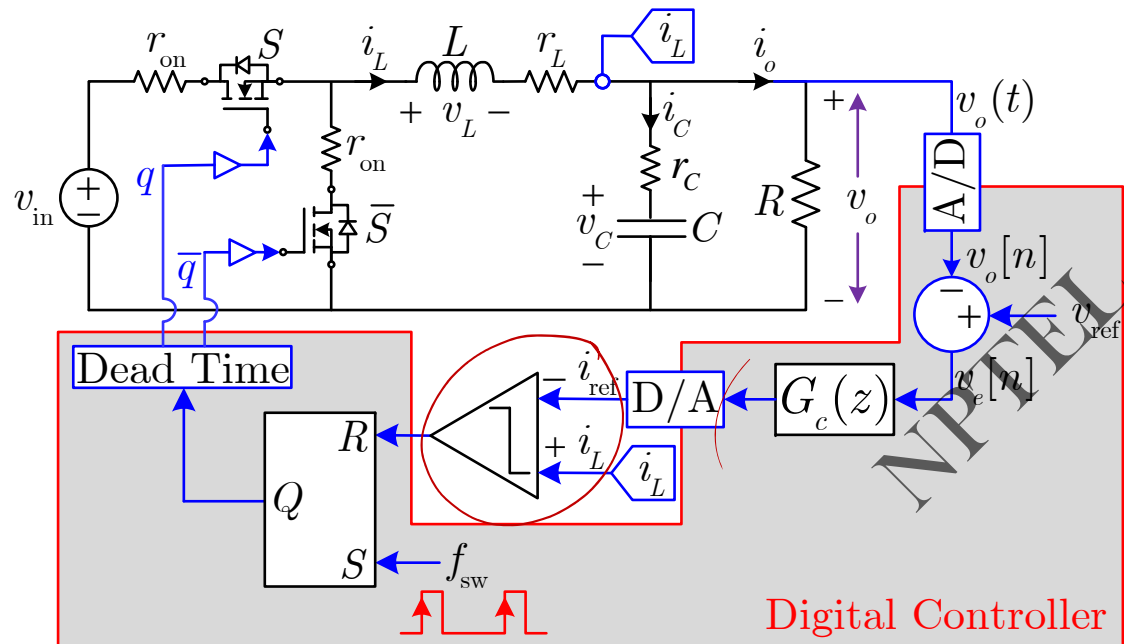
Lecture 26: MATLAB Model Development for Mixed-Signal Current Mode Control



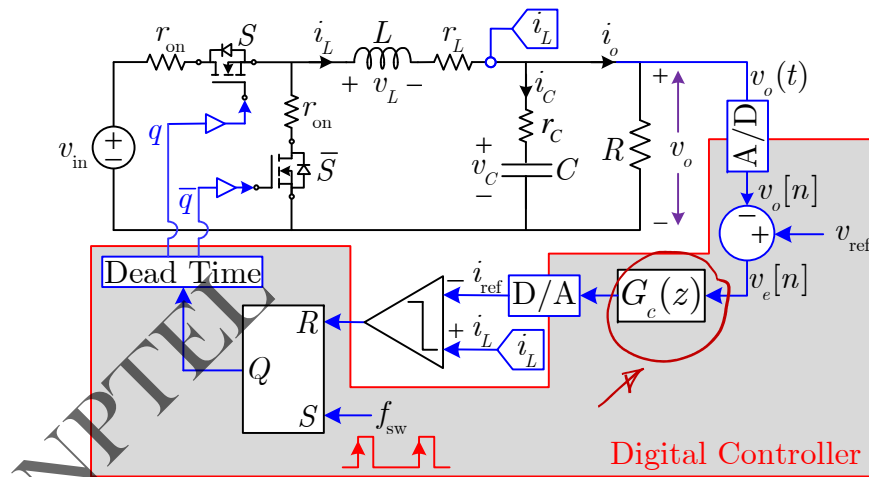
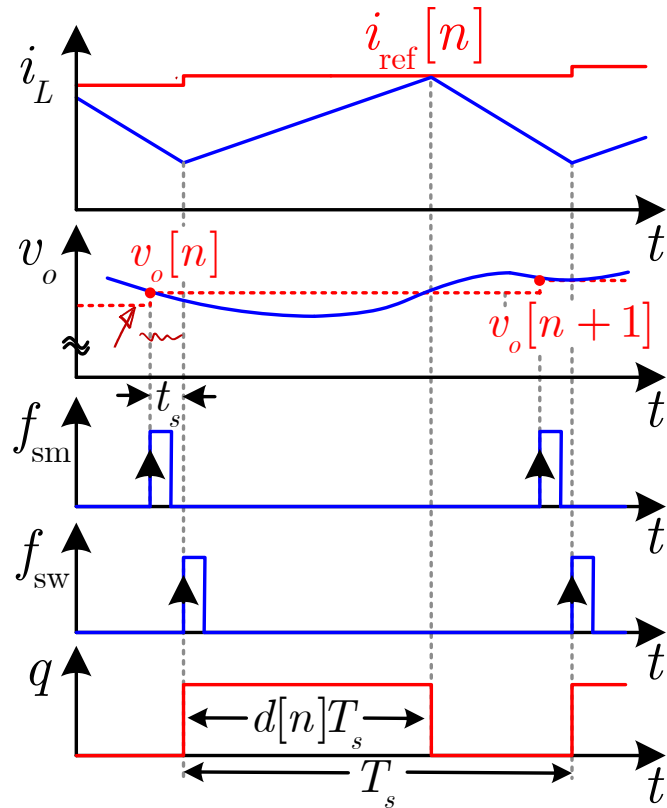
CONCEPTS COVERED

- Custom MATLAB model development for mixed signal current mode control
- MATLAB simulation study

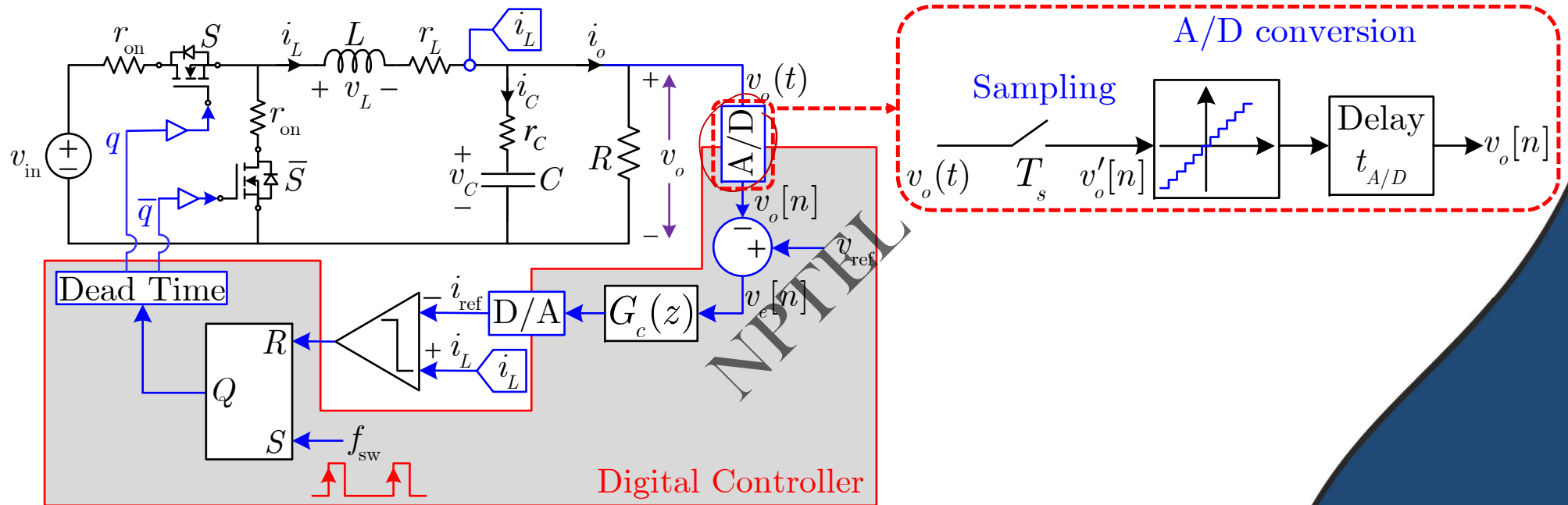
Mixed-Signal Peak Current Mode Control in a Buck Converter



Peak Current Mode Control of Buck Converter

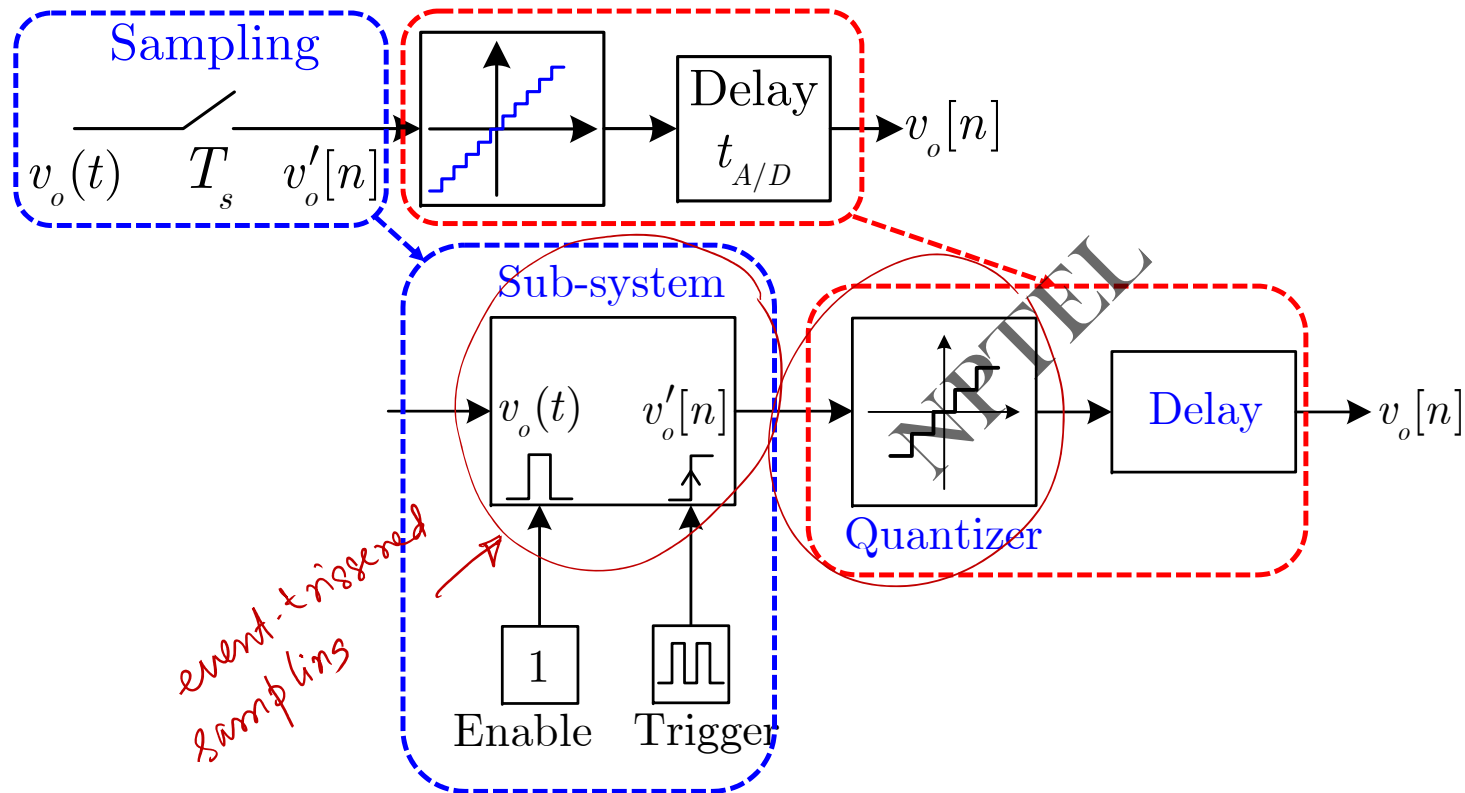


ADC

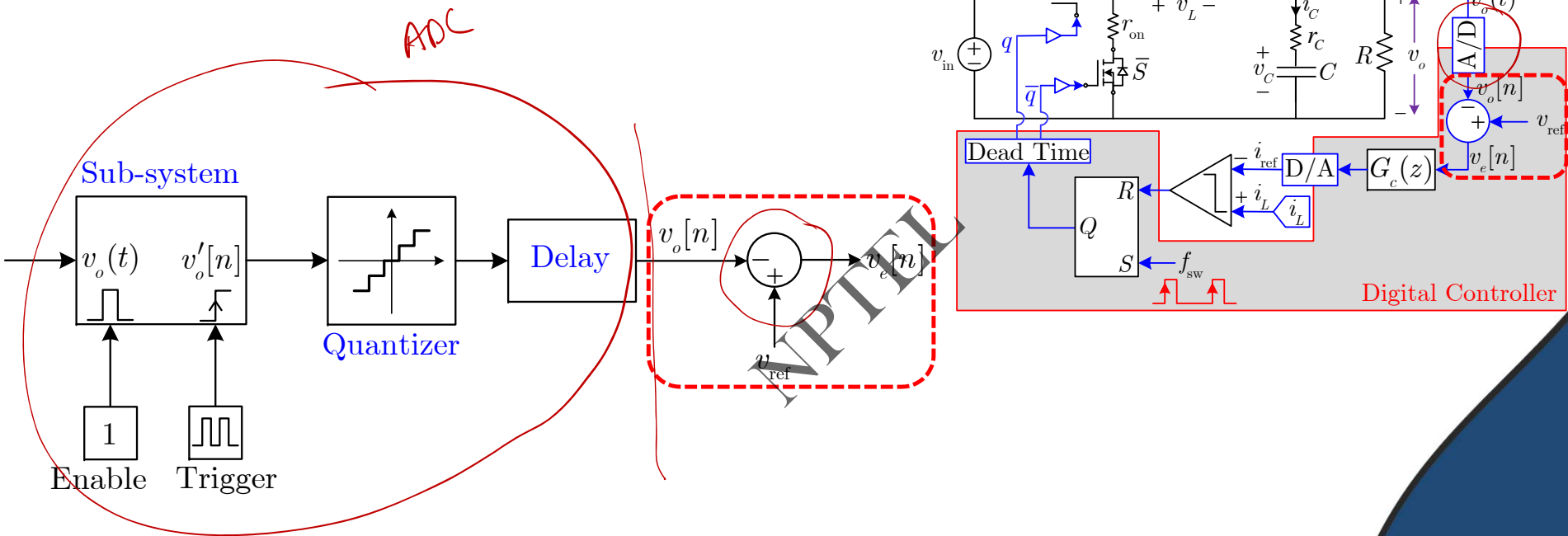


ADC (contd...)

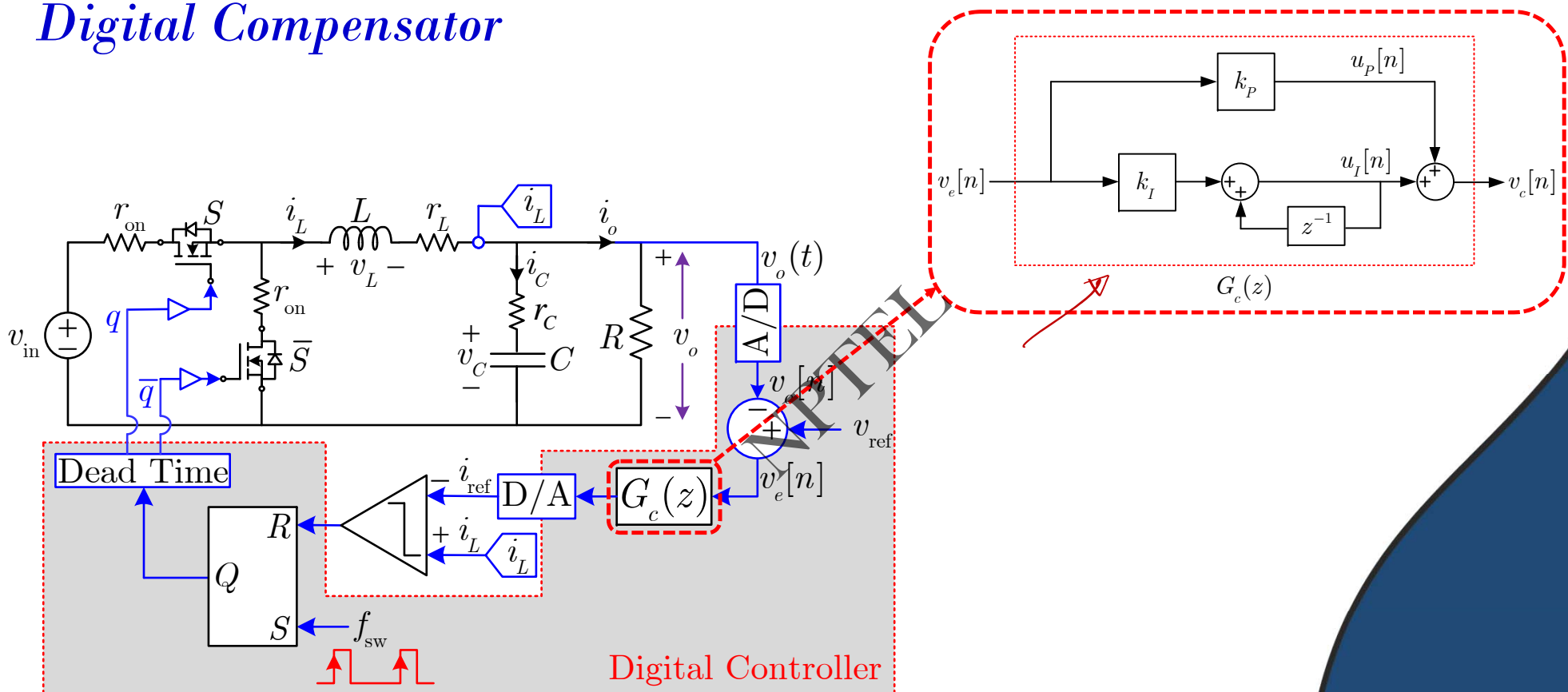
A/D conversion



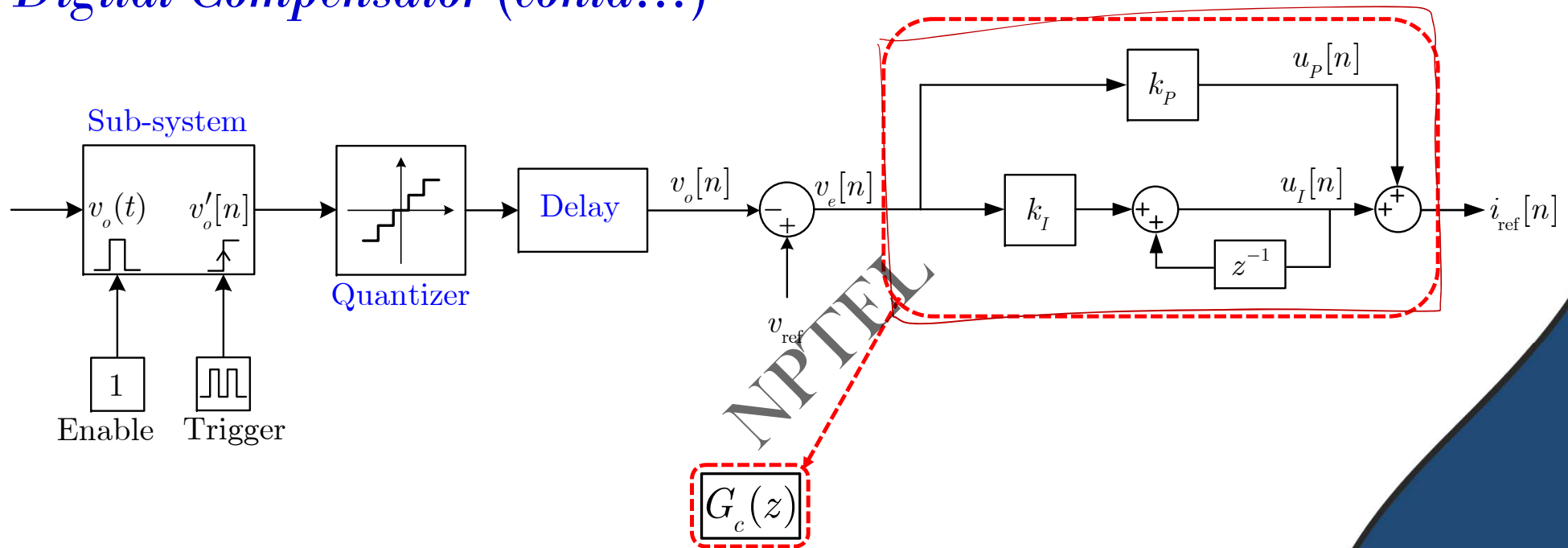
Voltage Error



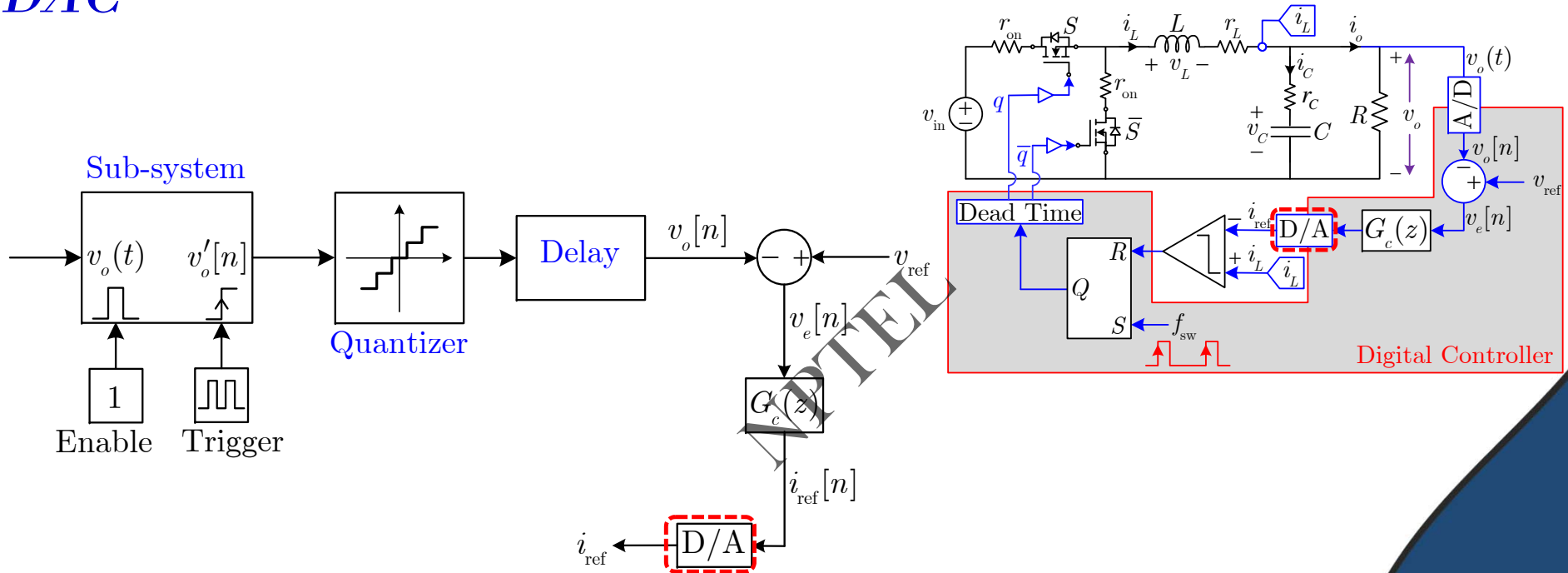
Digital Compensator



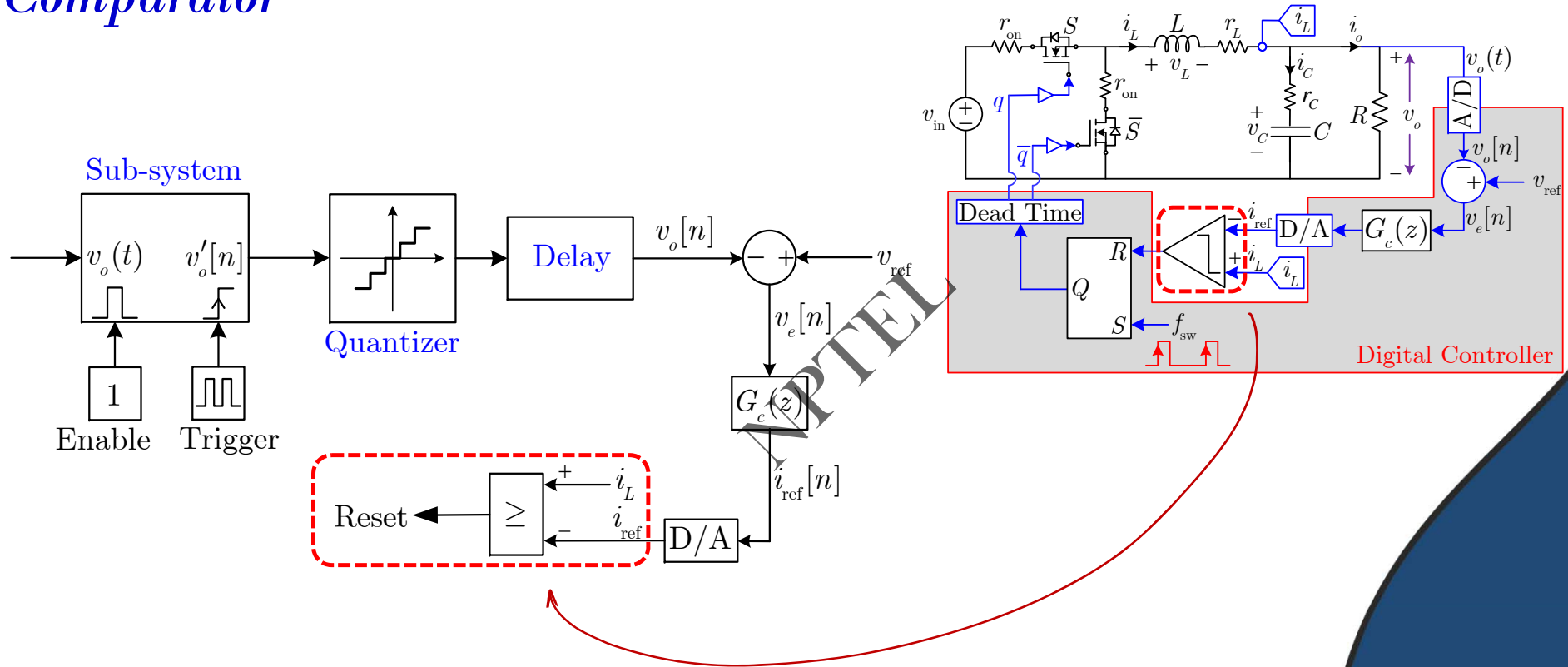
Digital Compensator (contd...)



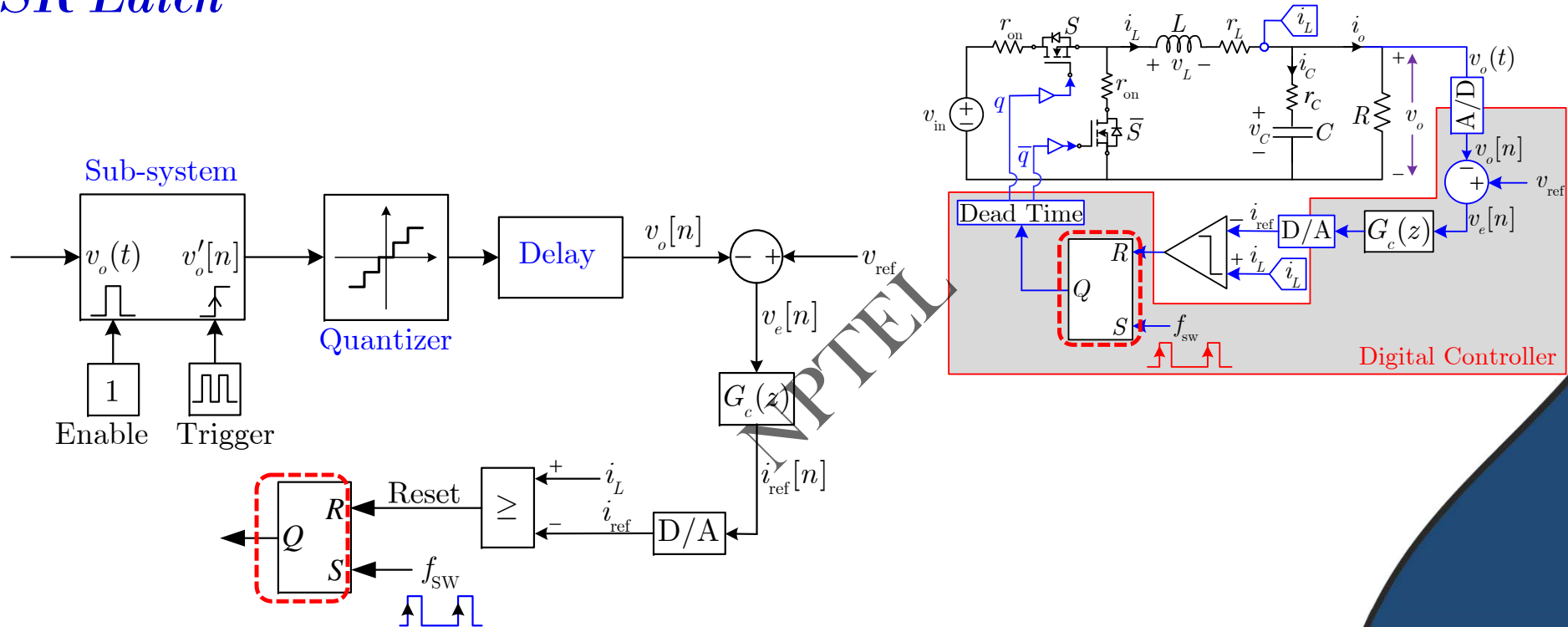
DAC



Comparator

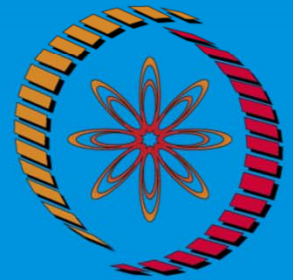


SR Latch



CONCLUSION

- Custom MATLAB model development for mixed signal current mode control
- MATLAB simulation study



**THANK
YOU !**