

2023-2 Workshop

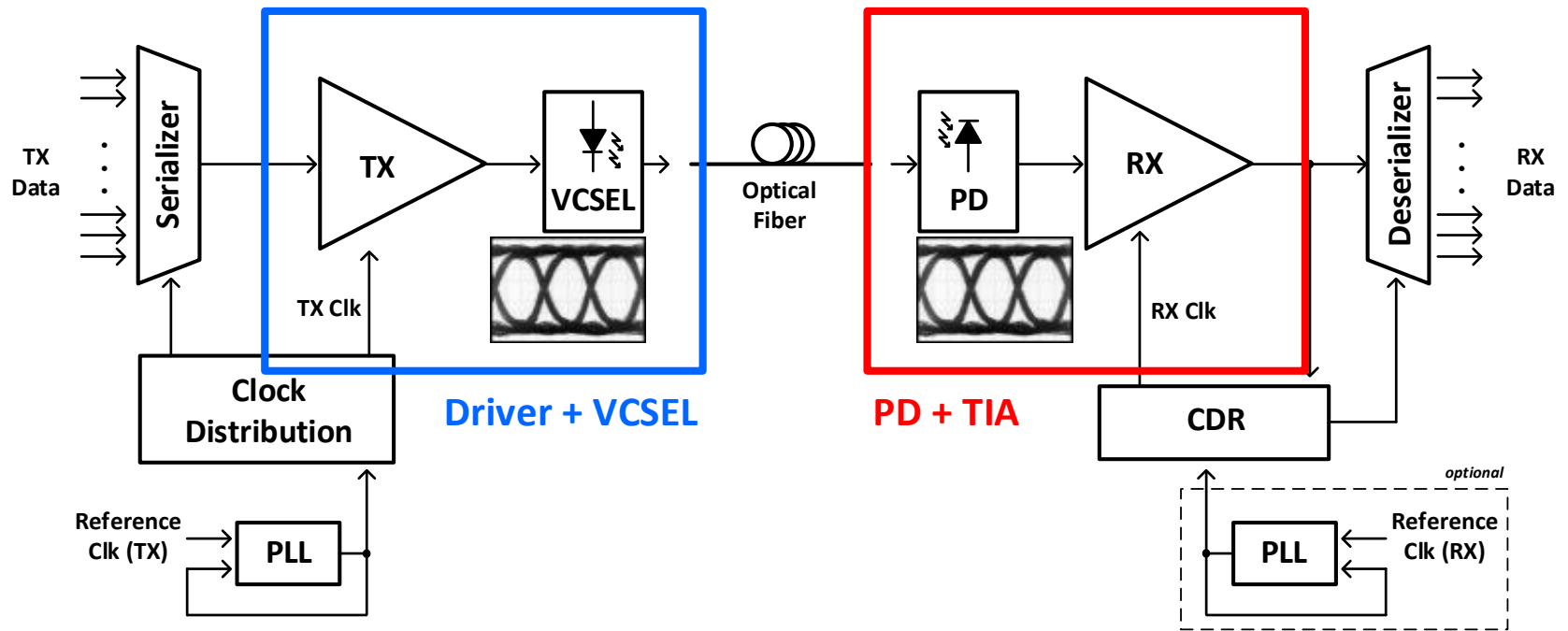
Research Topic:

Optical links for the data center

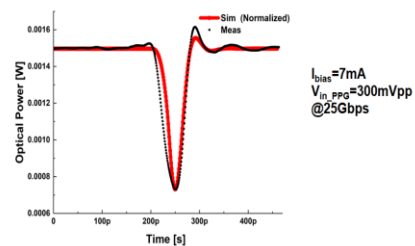
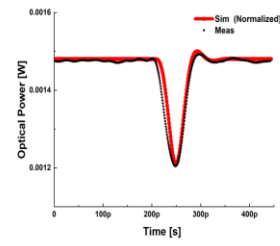
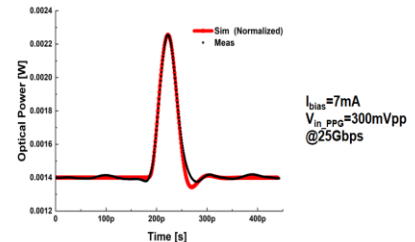
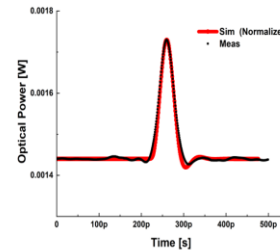
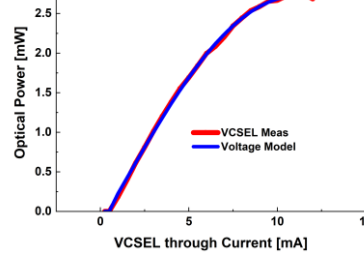
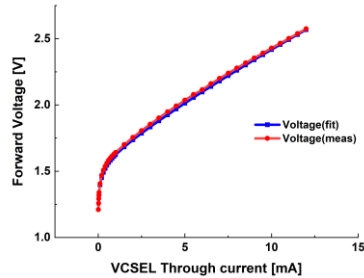
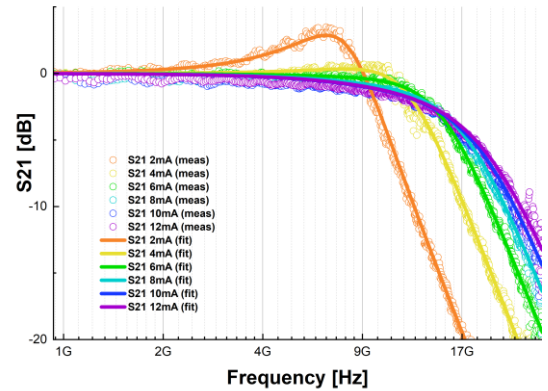
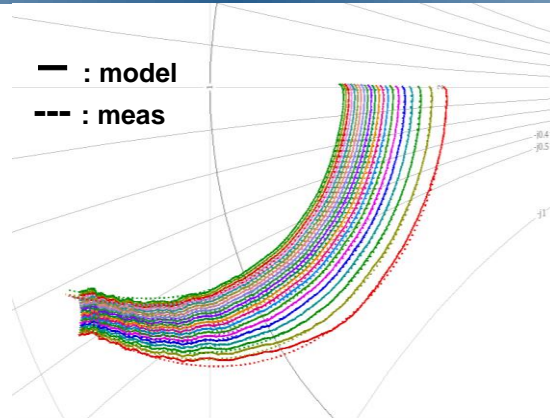
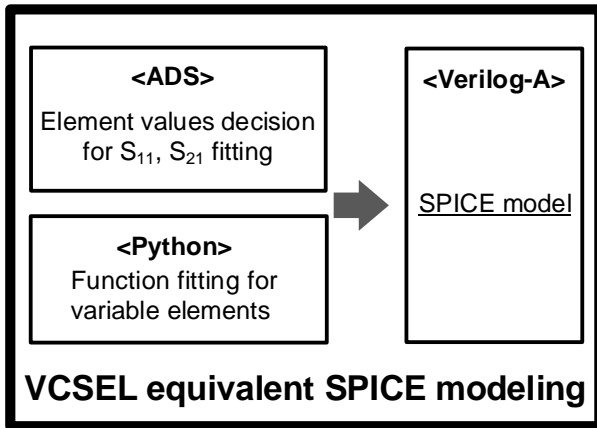
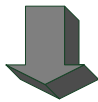
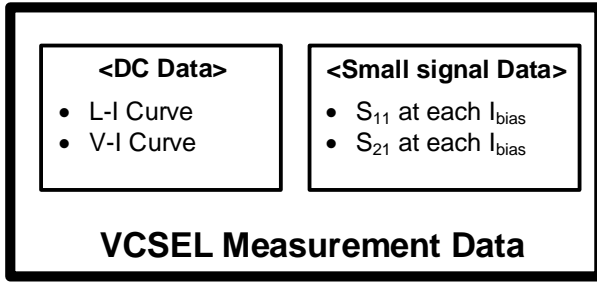
Writer: Jun-Seo Kim

Data: 23.08.16

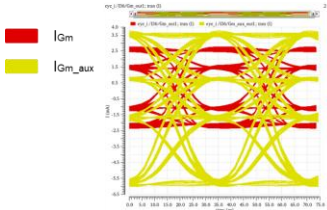
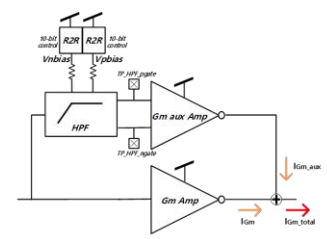
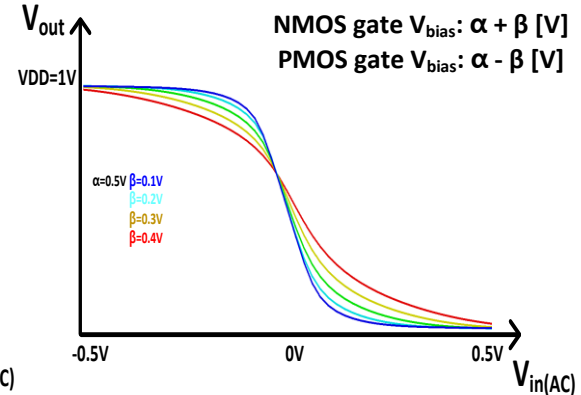
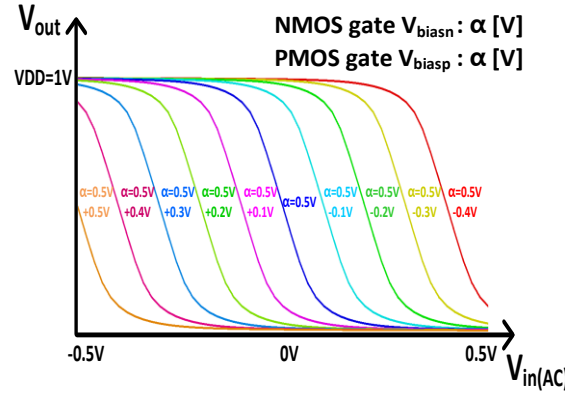
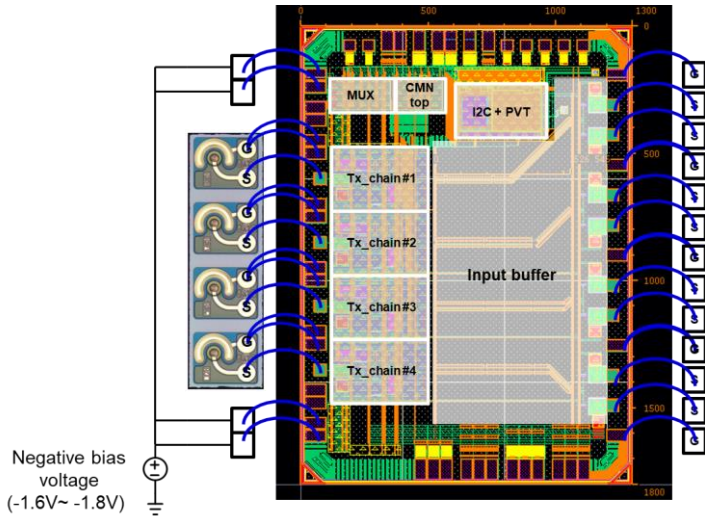
High-speed optical link for the data center



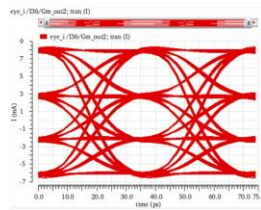
VCSEL equivalent Verilog-A modeling: piecewise linear fitting



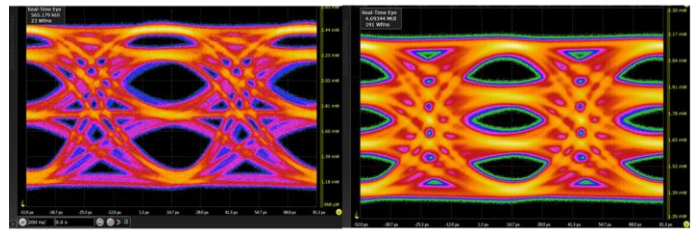
50x4 Gbps PAM-4 low power VCSEL driver with open loop RLM controller



Current summing

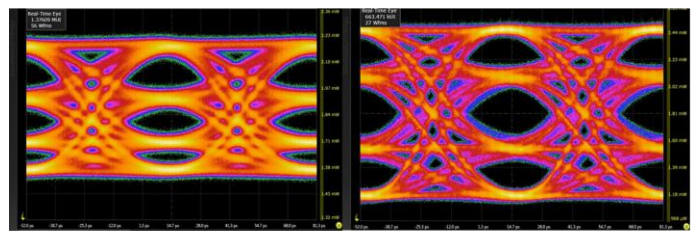
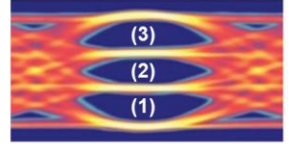


Common setup: 30Gb/s, PRBS7, VDD, Other I2C, I_{bias}



(1):H, (2):H, (3):L

(1):H, (2):L, (3):H



(1):L, (2):H, (3):H

(1):L, (2):H, (3):L

Optimum



PAM-4 optical receiver for RLM and EQ optimization

Topics:

- Differential TIA
- RLM control loop with histogram monitor
- ORX equalizer optimization