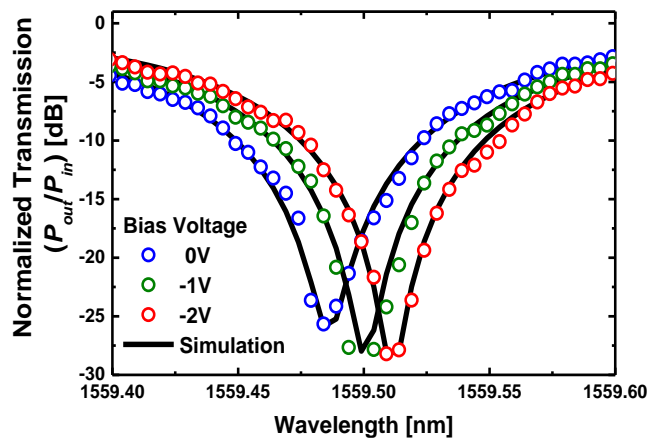


Large-signal Equiv. Circuit Model for Ring Modulator

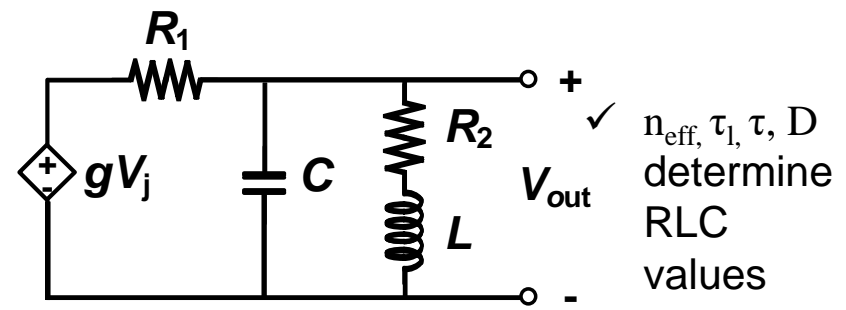
Will be presented on 2018 OFC

<Measured Transmission Curve>



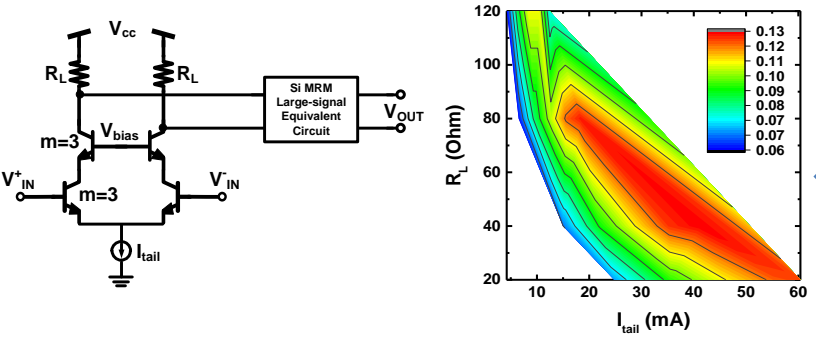
✓ $n_{\text{eff}}, \tau_l, \tau$ extracted

<Small-signal Equivalent Circuit>



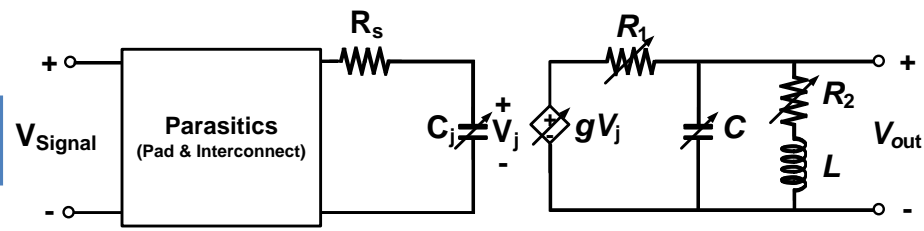
+ D
(Detuning)

<Large-signal Equivalent Circuit>



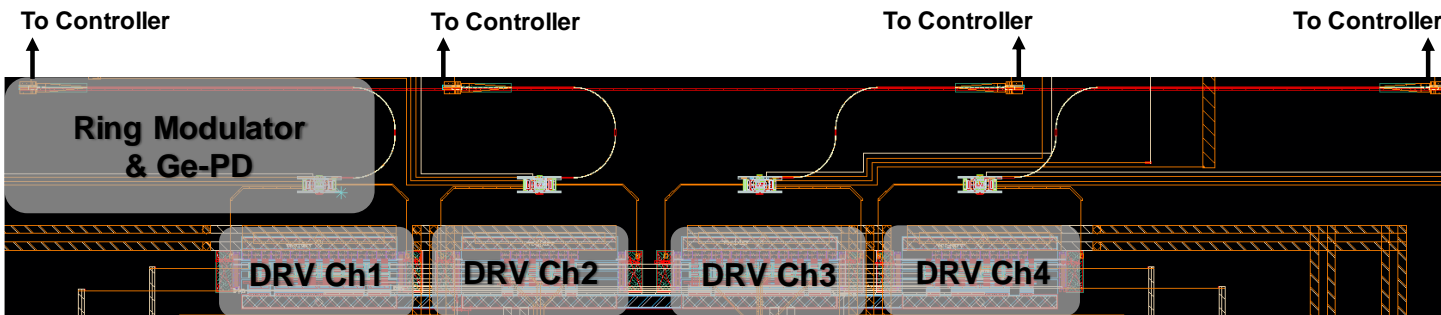
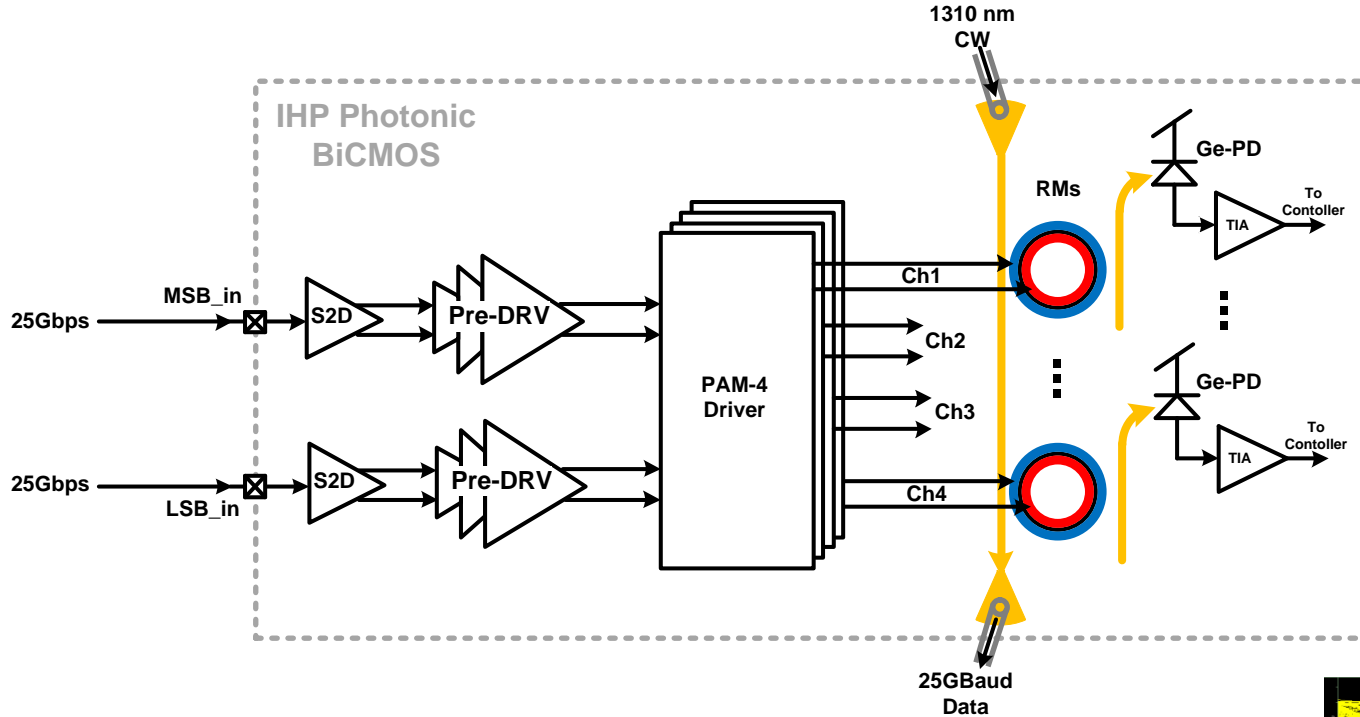
✓ Co-simulation & design optimization

<Large-signal Equivalent Circuit>

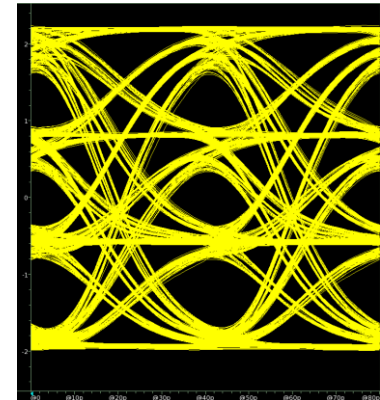


✓ Non-linear voltage-dependent elements achieved with SPICE model

Photonic BiCMOS PAM-4 Transmitter



<Layout of PAM-4 Tx>



<50-Gbps Simulated Result>

Optical PAM-4 Transmitter with RLM Calibration

