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**Date of data collection:** September 2017 - October 2017

**Date that the file was created:** 14<sup>th</sup> November 2017

**Location of data collection:** University of Southampton, U.K.

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**The excel file contains experimental data for the paper “High speed all-silicon carrier accumulation modulator based on a lateral MOS-capacitor”. In particular:**

**Fig. 2(a):** Calculated change in device capacitance (in pF/mm) as a function of applied voltage.

**Fig. 2(b):** Calculated phase shift (in radian/mm) as a function of applied voltage.

**Fig. 2(c):** Calculated propagation loss (in dB/mm) as a function of applied voltage.

**Fig. 4(a):** Measured transmission spectrum of the MZI modulator with 500  $\mu$ m long phase shifter as a function of applied voltage.

**Fig. 4(b):** Measured phase modulation (in radian) and extracted modulation efficiency  $V_\pi L_\pi$  (in V-cm) as a function of applied voltage.