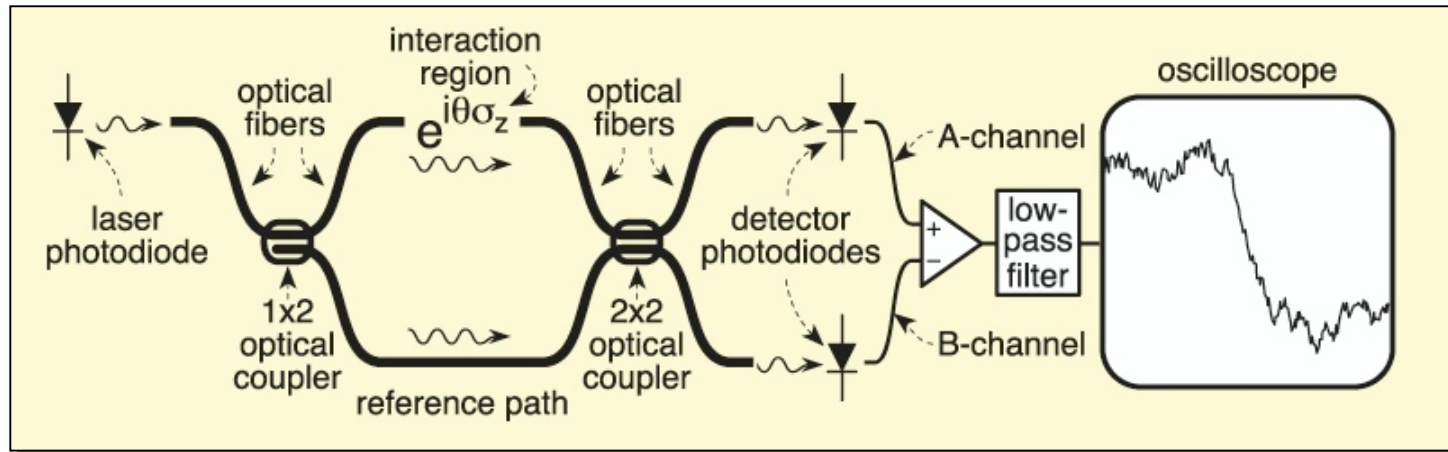


From “*Mike and Ike: The Missing Manual*”
 -- UW Spinometer Seminar Notes



The mathematics of quantum MOR maps
 one-to-one onto **engineering hardware**

- Recognize that A and B are *Kraus operators* (which generate POVMs)

$$\rho_{n+1} = A_{\text{op}}\rho_n A_{\text{op}}^\dagger + B_{\text{op}}\rho_n B_{\text{op}}^\dagger \Rightarrow A_{\text{op}}A_{\text{op}}^\dagger + B_{\text{op}}B_{\text{op}}^\dagger = I$$

- Recognize that interferometer “tuning invariance” is just *Choi’s Theorem*

$$A_{\text{op}}\rho_n A_{\text{op}}^\dagger + B_{\text{op}}\rho_n B_{\text{op}}^\dagger = A'_{\text{op}}\rho_n A'_{\text{op}}^\dagger + B'_{\text{op}}\rho_n B'_{\text{op}}^\dagger \Leftrightarrow \begin{pmatrix} A_{\text{op}} \\ B_{\text{op}} \end{pmatrix} = S \cdot \begin{pmatrix} A'_{\text{op}} \\ B'_{\text{op}} \end{pmatrix}$$