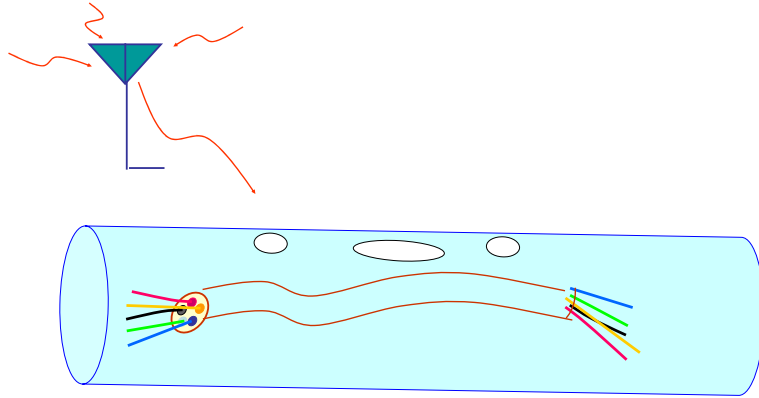
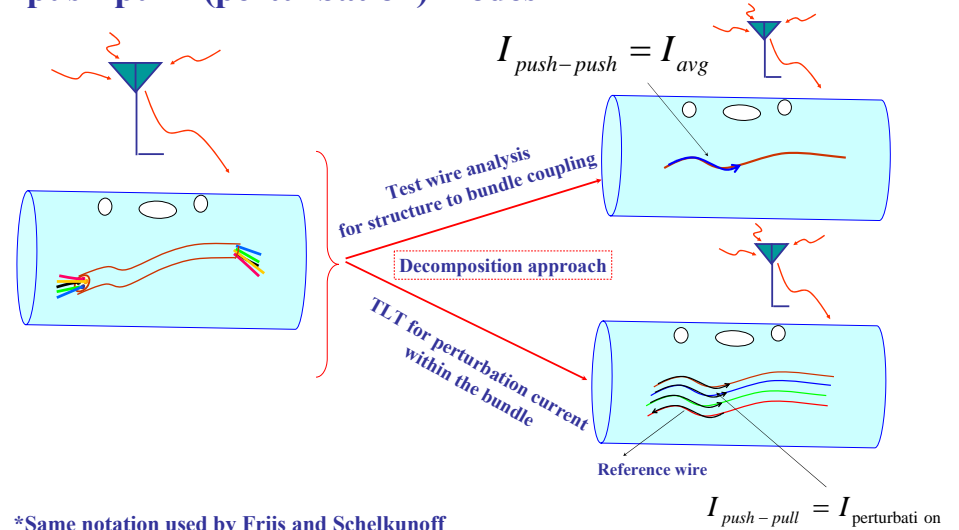


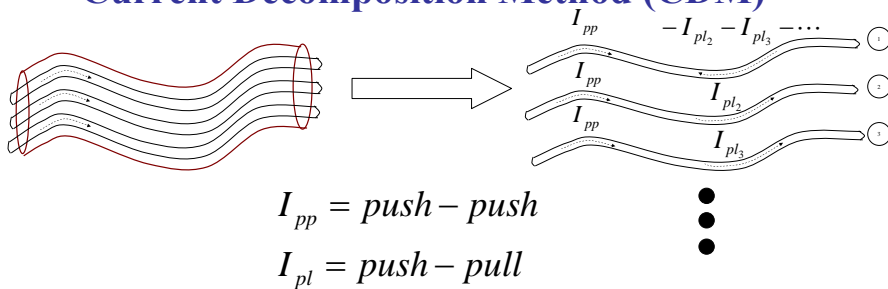
Objective: Computationally efficient analysis of field coupling on multiconductor lines in presence of complex structures



Decompose the current into push-push* (average) and push-pull* (perturbation) modes



Current Decomposition Method (CDM)



Push-Push Mode Analysis

$$I_{pp} = \frac{L_{11}I_{test} - \sum_{k=2}^N (L_{1k} - L_{11})I_{plk}}{\sum_{k=1}^N L_{1k}}$$

Push-Pull Mode Analysis

$$\left[\begin{aligned} \frac{d(V_i^s - V_1^s)}{dx} + j\omega \bar{L} \bar{I}_{pl} &= E_{i_x}^{exc} - E_{1_x}^{exc} \\ \frac{dI_{pl}}{dx} + j\omega \bar{C} (V_i^s - V_1^s) &= 0 \end{aligned} \right]$$

Validation

