The method is automatable, update of model parameter can be done

Create a GUI for the program

Final simulation shows good agreement with target values

Investigate the influence of tester offsets

Coefficients

\[
\begin{pmatrix}
\frac{\partial F}{\partial M_1} & \cdots & \frac{\partial F}{\partial M_n} \\
\vdots & \ddots & \vdots \\
\frac{\partial F}{\partial M_n} & \cdots & \frac{\partial F}{\partial M_1}
\end{pmatrix}
\]

All dependencies of PCM parameters on model parameters are included in the sensitivity matrix \( S \) (normalized here)

PCM Simulation Test Bench

Monte Carlo Simulation

Input: model parameter variations

Output: simulated PCM parameter deviations

Covariance Matrix Equation

\[ S \cdot \text{Cov}(M) \cdot S^T = \text{Cov}(P) \]

\( M = (\vec{m}_1, \vec{m}_2, \ldots, \vec{m}_n) \) model parameter vectors of \( n \) Monte Carlo samples

\( P = (\vec{p}_1, \vec{p}_2, \ldots, \vec{p}_m) \) PCM parameter vectors of \( m \) measurements

Flow Statistical Parameter Calculation

Conclusions & Next Steps

- A new method was introduced to calculate standard deviations and correlation coefficients in one step
- The method is automatable, update of model parameter can be done very fast
- Final simulation shows good agreement with target values

Next steps
- Use DOE PCM data for better target correlations
- Investigate the influence of tester offsets
- Apply the new method to other technologies
- Create a GUI for the program