

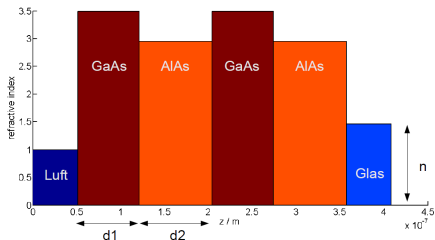


# Stochastische Abweichungen in periodischen Strukturen

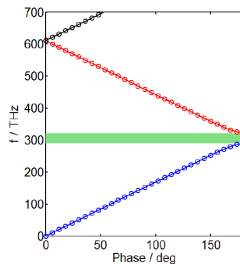
Sven Backhove, Orkun Konc

Wintersemester 2012/13

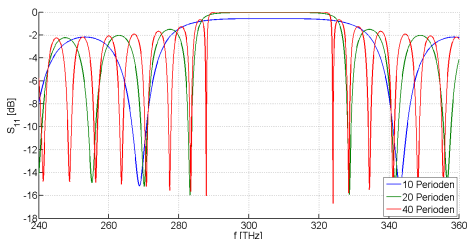
## Braggspiegel mit 2 Schichtperioden

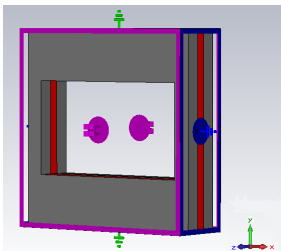


## Dispersionsdiagramm

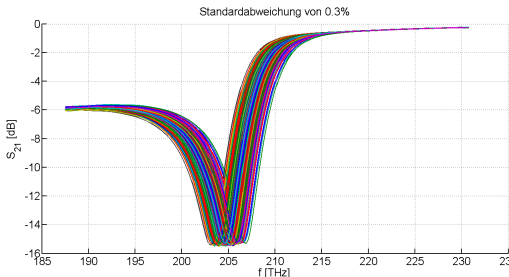
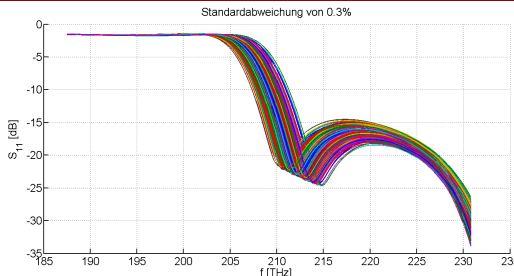


## Eingangsreflexion





**oben:** Aufbau Fishnet in CST mit Randbedingungen  
**rechts:** Ergebnisse der S-Parameter für Reflexion  $S_{11}$  und Transmission  $S_{21}$  bei einer Variation der Materialparameter um 0.1%

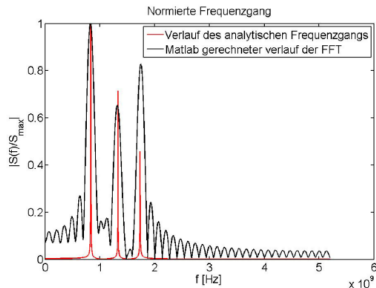




# Implementierung eines digitalen autoregressiven Filters

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Wintersemester 2012/13



$$s(t) = \sum_{n=1}^p A_n \sin(\omega_n t + \phi_n) e^{-\alpha_n t}$$

$$y(n) = \sum_{k=1}^N c_k y(n-k)$$

$$\sum_{n=0}^{\infty} |s(n) - y(n)|^2 \rightarrow \min$$

$$\|s - Hc\| \rightarrow \min$$

$$s = [s(m+N), s(m+N+1), \dots, s(m+N+M)]^T$$

$$c = [c_1, c_2, \dots, c_N]^T$$

$$H = \begin{pmatrix} s(m+N-1) & s(m+N-2) & \dots & s(m) \\ s(m+N) & s(m+N-1) & \dots & s(m+1) \\ \vdots & \vdots & \ddots & \vdots \\ s(m+M-1) & s(m+M-2) & \dots & s(m+M-N) \end{pmatrix}$$

$$Y(z) = \frac{\sum_{k=0}^{N-1} y(k) z^{N-k} - \sum_{i=1}^N c_i \sum_{k=0}^{N-i-1} y(k) z^{N-i-k}}{z^N - \sum_{k=1}^N c_k z^{N-k}}$$

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