$$y[k] = -a_1 y[k-1] + b_0 u[k-2] + e[k] - c_1 e[k-1]$$

$$\Rightarrow \hat{y}[k] = -a_1 y[k-1] + b_0 u[k-2] - c_1 e[k-1]$$

↳ $$\frac{\partial}{\partial a_1}\hat{y}[k] = -y[k-1] + 0 - c_1 \frac{\partial}{\partial a_1}(y[k-1] - \hat{y}[k-1])$$

$$= -y[k-1] + c_1 \frac{\partial}{\partial a_1}\hat{y}[k-1]$$

→ Analog dazu:

$$\frac{\partial}{\partial b_0}\hat{y}[k] = u[k-2] + c_1 \frac{\partial}{\partial b_0}\hat{y}[k-1]$$

$$\frac{\partial}{\partial c_1}\hat{y}[k] = (\hat{y}[k-1] - y[k-1]) + c_1 \frac{\partial}{\partial c_1}\hat{y}[k-1]$$