

# 3. Linear sources and dipoles

## Student Group

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# Gegeben sind folgende Gleichungen

$SU_A = f(U, E)S$	mit III.	$S_{quad}$
$SU_A = \text{color{blue}}\{U_D\} - U_C S$	mit II. und I.	$\text{color{blue}}\{U_D\} = \{1 \text{ over } A_D\} \cdot U_A \text{ overset{A_D} \to \infty} \text{Vongrigharrow } 0S$
$S_{quad}$	$S_{quad}$	$S_{quad}$
$SU_A = \text{color{blue}}\{U_D\} - U_C S$	mit II. und I.	$\text{color{blue}}\{U_D\} = \{1 \text{ over } A_D\} \cdot U_A \text{ overset{A_D} \to \infty} \text{Vongrigharrow } 0S$
$S_{quad}$	$S_{quad}$	$S_{quad}$
$SU_A = \text{quad} \text{quad } 0 \text{ quad } \text{color{blue}}\{U_C\} S$	mit V.	$\text{color{blue}}\{U_C\} = \{1 \text{ over } C\} \cdot \text{quad}(\text{int}_{t_0}^{t_1} I_C \ dt + Q_0(t_0))S$
$S_{quad}$	$S_{quad}$	$S_{quad}$
$SU_A = \{1 \text{ over } C\} \cdot \text{quad}(\text{int}_{t_0}^{t_1} \text{color{blue}}\{I_C\} \ dt + Q_0(t_0)) S$	mit IV.	$\text{color{blue}}\{I_C\} = I_R S$
$S_{quad}$	$S_{quad}$	$S_{quad}$
$SU_A = \text{color{blue}}\{-\{1 \text{ over } C\} \cdot \text{quad}(\text{int}_{t_0}^{t_1} I_R \ dt + Q_0(t_0) \text{color{blue}}\{I_C\})\} S$	Ausklammern	
$S_{quad}$	$S_{quad}$	$S_{quad}$
$SU_A = -\{1 \text{ over } C\} \cdot \text{quad}(\text{int}_{t_0}^{t_1} I_R \ dt - \text{color{blue}}\{Q_0(t_0) \text{ over } C\}) S$	Integrationskonstante betrachten	$\text{color{blue}}\{Q_0(t_0) \text{ over } C\} = U_C(t_0) = -U_{A0}S$
$S_{quad}$	$S_{quad}$	$S_{quad}$
$SU_A = -\{1 \text{ over } C\} \cdot \text{quad}(\text{int}_{t_0}^{t_1} \text{color{blue}}\{I_R\} \ dt + U_{A0}) S$	mit VI. und II.	$\text{color{blue}}\{I_R\} = \{U_R \text{ over } R\} = \{U_E \text{ over } R\} S$
$S_{quad}$	$S_{quad}$	$S_{quad}$
$SU_A = -\{1 \text{ over } C\} \cdot \text{quad}(\text{int}_{t_0}^{t_1} \text{color{blue}}\{1 \text{ over } R\} \cdot U_E \ dt + U_{A0}) S$	Konstante vorziehen	
$S_{quad}$	$S_{quad}$	$S_{quad}$
$SU_A = -\{1 \text{ over } R\} \cdot \text{quad}(\text{int}_{t_0}^{t_1} U_E \ dt + U_{A0}) S$	$S_{quad}$	$S_{quad}$

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