

# 3. Linear sources and dipoles

## Student Group

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# Gegeben sind folgende Gleichungen

$SU_A = f(U, E)S$	mit III.	
$SU_A = \text{color}\{blue\}(-U, D) - U, CS$	mit II. und I.	$\text{color}\{blue\}\{U, D\} = \{1 \text{ over } A, D\} \cdot U_A \text{ over set}\{A, D \rightarrow \infty\} \text{Vongrigharrow } 0S$
$SU_A = \text{color}\{blue\}(-U, D) - U, CS$	mit II. und I.	$\text{color}\{blue\}\{U, D\} = \{1 \text{ over } A, D\} \cdot U_A \text{ over set}\{A, D \rightarrow \infty\} \text{Vongrigharrow } 0S$
$SU_A = \text{color}\{blue\}(-U, D) - U, CS$	mit V.	$\text{color}\{blue\}\{U, C\} = \{1 \text{ over } C\} \cdot \int_{t_0}^{t_1} I_C \ dt + Q_0(t_0)S$
$SU_A = \{1 \text{ over } C\} \cdot \int_{t_0}^{t_1} \text{color}\{blue\}\{I, C\} \ dt + Q_0(t_0)S$	mit IV.	$\text{color}\{blue\}\{I, C\} = I, RS$
$SU_A = \text{color}\{blue\}(-1 \text{ over } C) \cdot \int_{t_0}^{t_1} I, R \ dt + Q_0(t_0) \text{color}\{blue\}\{I\}S$	Ausklammern	
$SU_A = -\{1 \text{ over } C\} \cdot \int_{t_0}^{t_1} I, R \ dt - \text{color}\{blue\}\{Q_0(t_0) \text{ over } C\}S$	Integrationskonstante betrachten	$\text{color}\{blue\}\{Q_0(t_0) \text{ over } C\} = U, C(t_0) = -U, \{A0\}S$
$SU_A = -\{1 \text{ over } C\} \cdot \int_{t_0}^{t_1} \text{color}\{blue\}\{I, R\} \ dt + U, \{A0\}S$	mit VI. und II.	$\text{color}\{blue\}\{I, R\} = \{U, R \text{ over } R\} = \{U, E \text{ over } R\}S$
$SU_A = -\{1 \text{ over } C\} \cdot \int_{t_0}^{t_1} \text{color}\{blue\}\{1 \text{ over } R\} \cdot U, E \ dt + U, \{A0\}S$	Konstante vorziehen	
$SU_A = -\{1 \text{ over } R\} \cdot \int_{t_0}^{t_1} U, E \ dt + U, \{A0\}S$		

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