# rechnung_spannungsfolger

## Student Group

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## $I.\quad$ Analysis of the Currents

| | | |
|---|---|---|
| by (2+3) | $\color{blue}{I_p} = \color{blue}{I_m} = 0$ | Therefore, $I_p$ and $I_m$ are defined |
| $\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ |
| by (3) and (5) | $\color{blue}{I_o} = I_m = 0$ | By this, $I_o$ is defined |
| $\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ |

## $II.\quad$ Analysis of the Voltage Amplification

| | | |
|---|---|---|
| by (0) | $\color{blue}{A_V}=\frac{U_O}{U_I}$ | $\quad$ |
| $\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ |
| $\quad$ | $A_V=\frac{U_O}{\color{blue}{U_I}}$ | with (4) |
| $\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ |
| $\quad$ | $A_V=\frac{U_O}{\color{blue}{U_O+U_D}}$ | $\quad$ |
| $\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ |
| $\quad$ | $A_V=\frac{\color{blue}{U_O}}{\color{blue}{U_O}+U_D}$ | with (1) |
| $\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ |
| $\quad$ | $A_V=\frac{\color{blue}{A_D\cdot U_D}}{\color{blue}{A_D\cdot U_D}+U_D}$ | $\quad$ |
| $\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ |
| $\quad$ | $A_V=\frac{A_D\cdot U_D}{A_D\cdot U_D + U_D}$ | $\quad$ |
| $\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ |
| $\quad$ | $A_V=\color{blue}{\frac{A_D\cdot U_D}{A_D\cdot U_D + U_D}}$ | Expand with $\frac{1}{A_D\cdot U_D}$ |
| $\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ |
| $\quad$ | $A_V=\color{blue}{\frac{A_D\cdot U_D\cdot\frac{1}{A_D\cdot U_D}}{(A_D\cdot U_D + U_D)\cdot \frac{1}{A_D\cdot U_D}}}$ | $\quad$ |
| $\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ |
| $\quad$ | $A_V=\color{blue}{\frac{1}{1 + \frac{1}{A_D}}}$ | $\quad$ |
| $\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ |
| $\quad$ | $A_V=\frac{1}{1 + \frac{1}{A_D}}$ | $\quad$ |
| $\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ |
| $\quad$ | $A_V=\frac{1}{1 + \color{blue}{\frac{1}{A_D}}}$ | with $\frac{1}{A_D} \xrightarrow{A_D \rightarrow \infty} 0$ |
| $\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ |
| $\quad$ | $A_V=\frac{1}{1 + \color{blue}{0}}$ | $\quad$ |
| $\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ |
| $\quad$ | $A_V=\frac{1}{1}=1$ | $\quad$ |
| $\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ | $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ |

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