

# Structured Electronic Design

## Application of Negative Feedback in Amplifier Design

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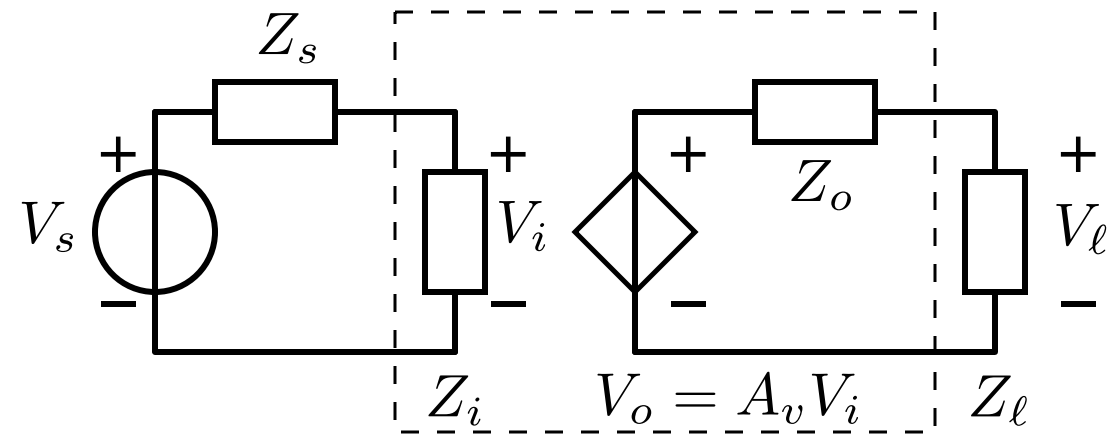
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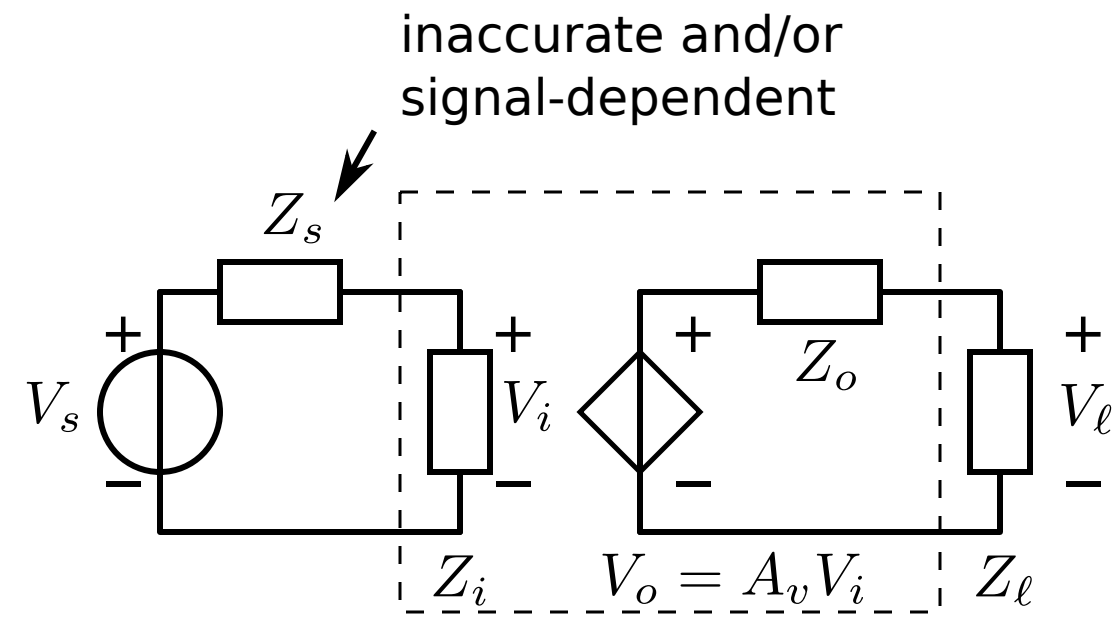
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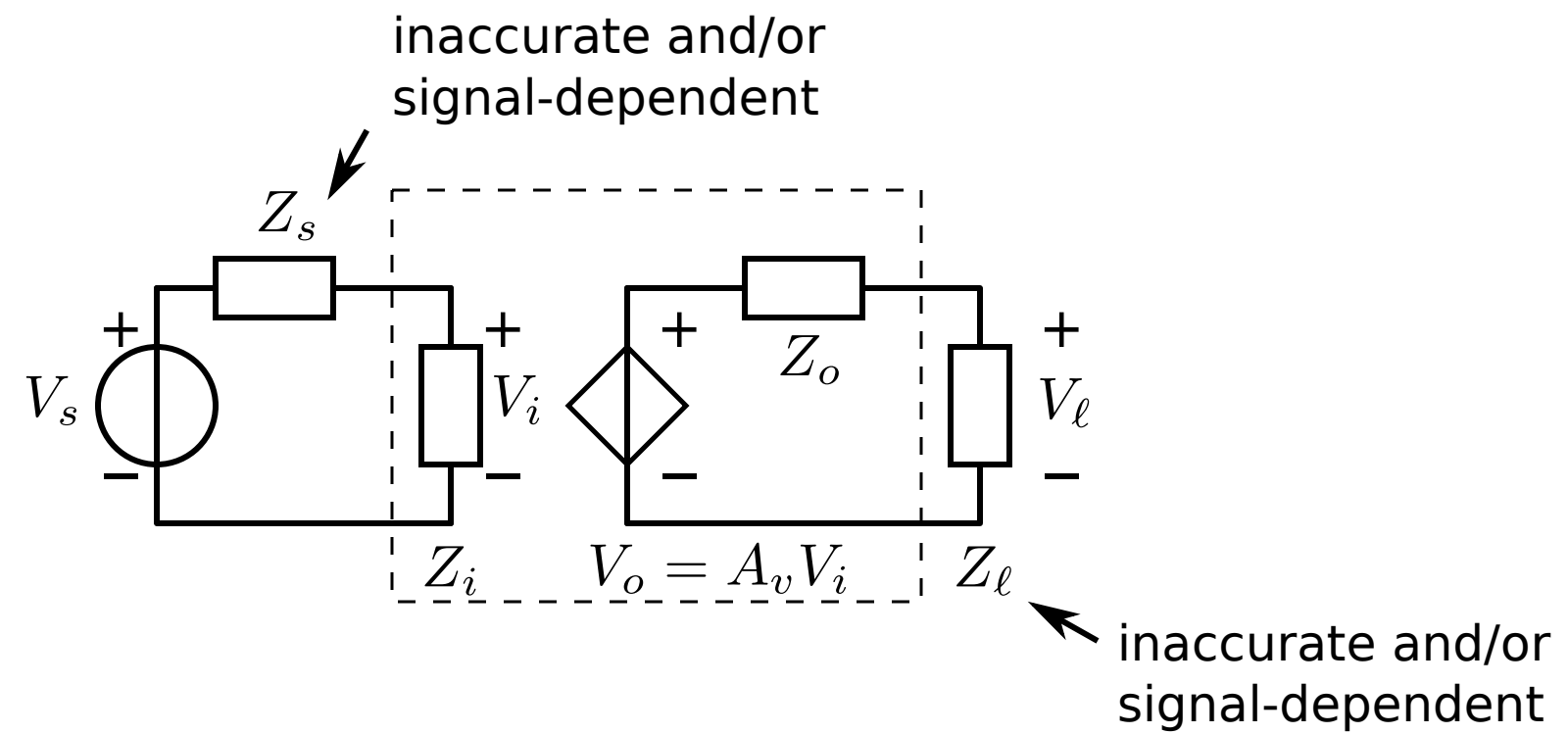
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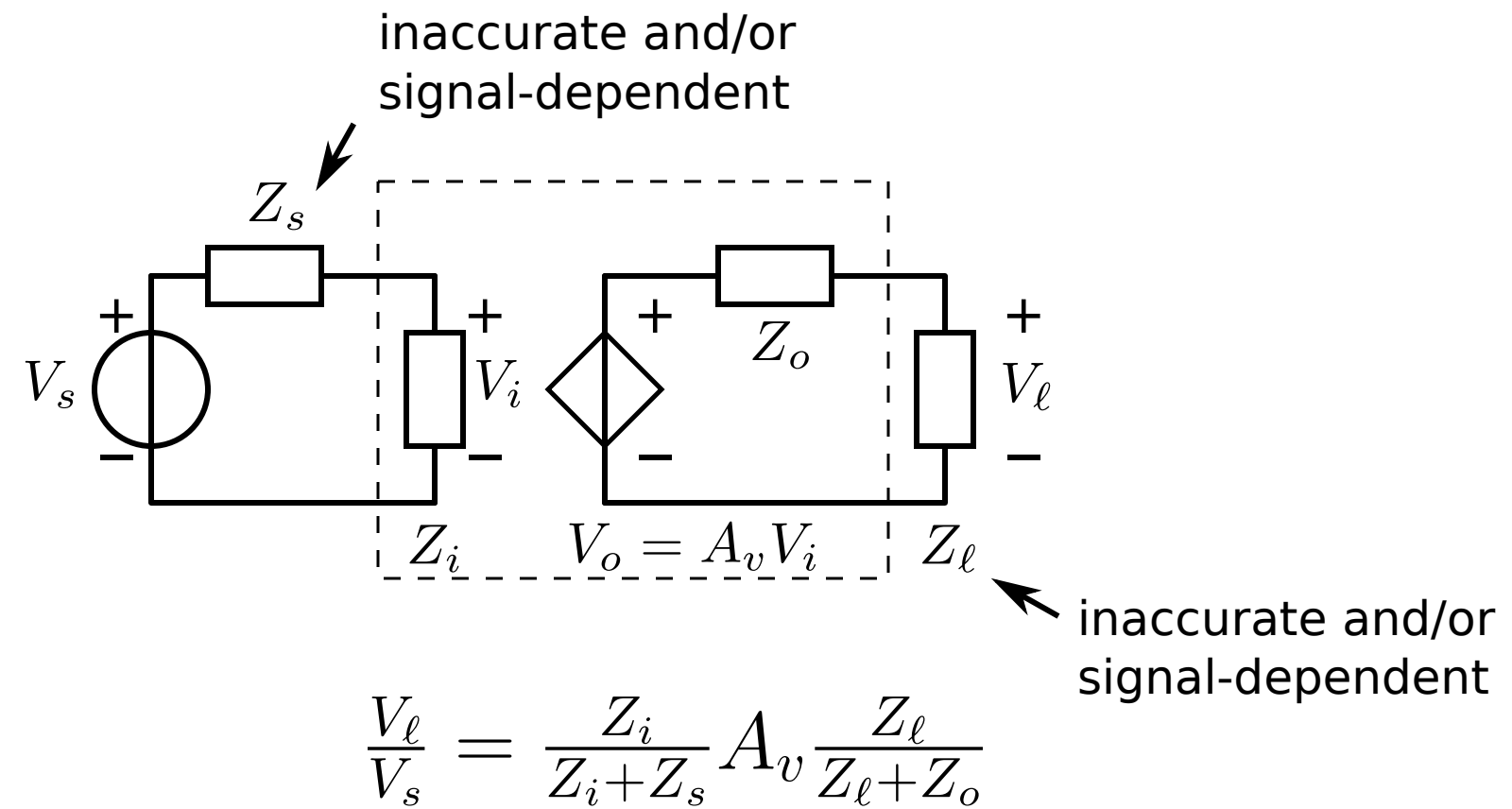


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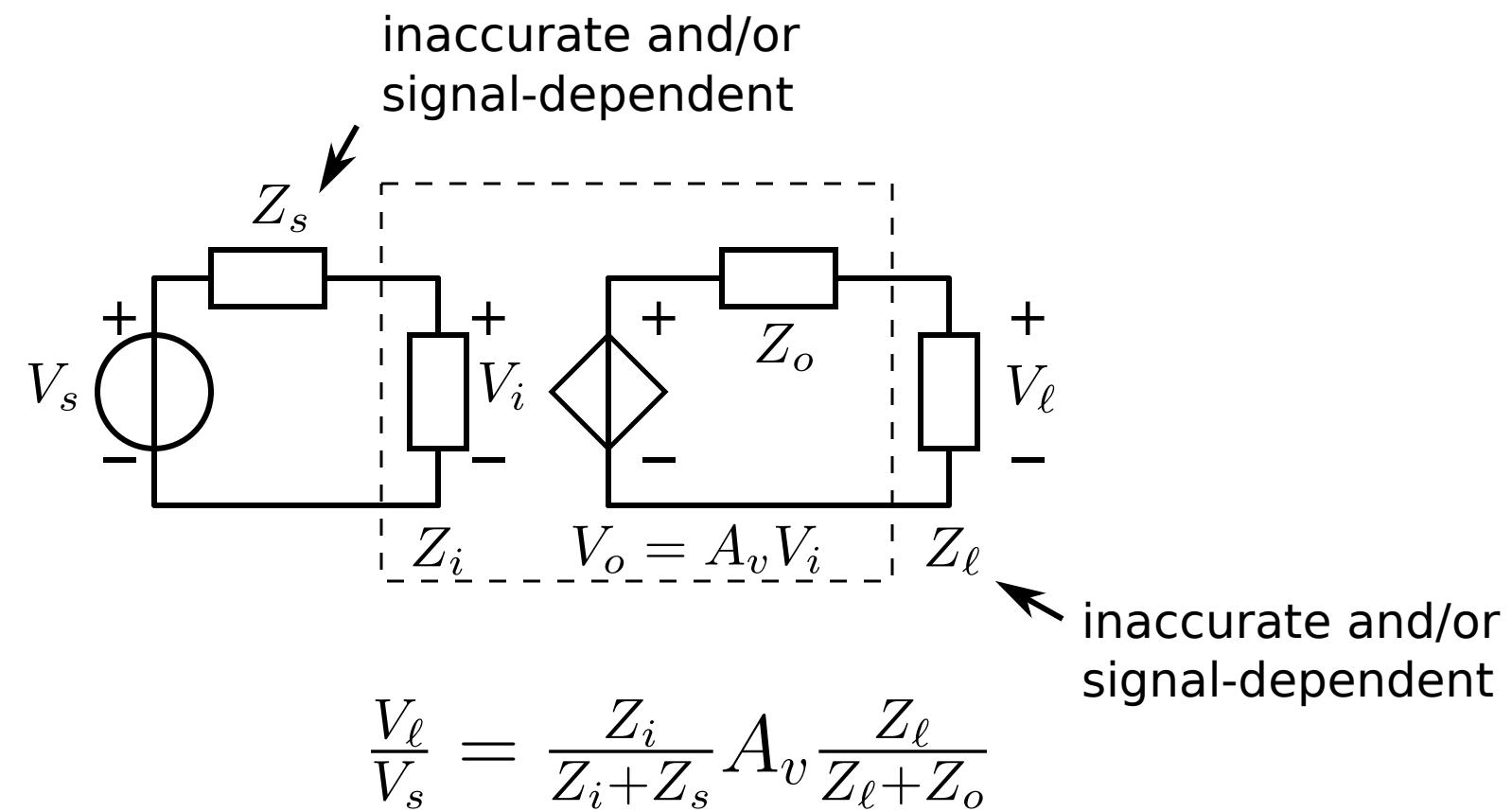




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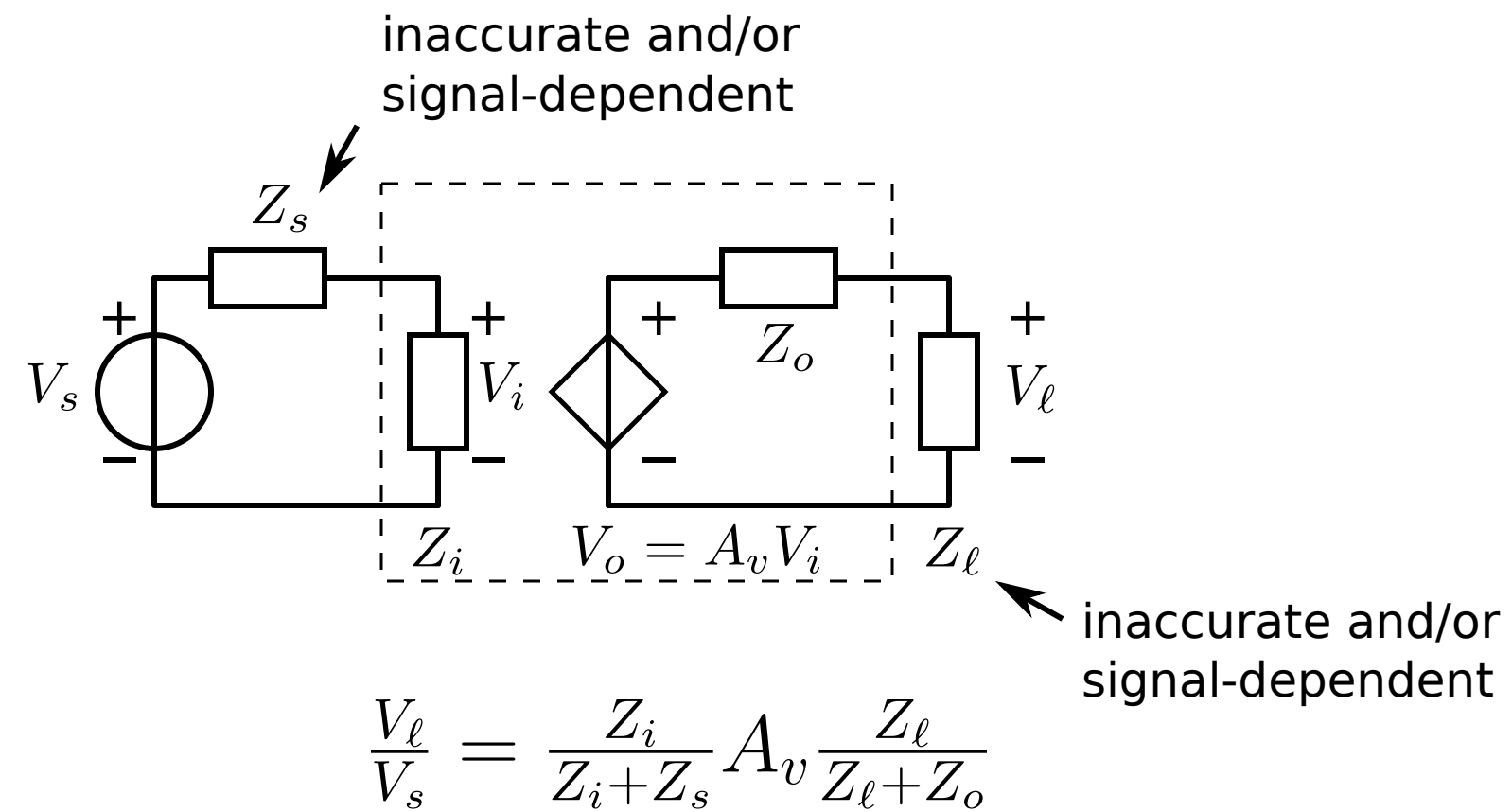


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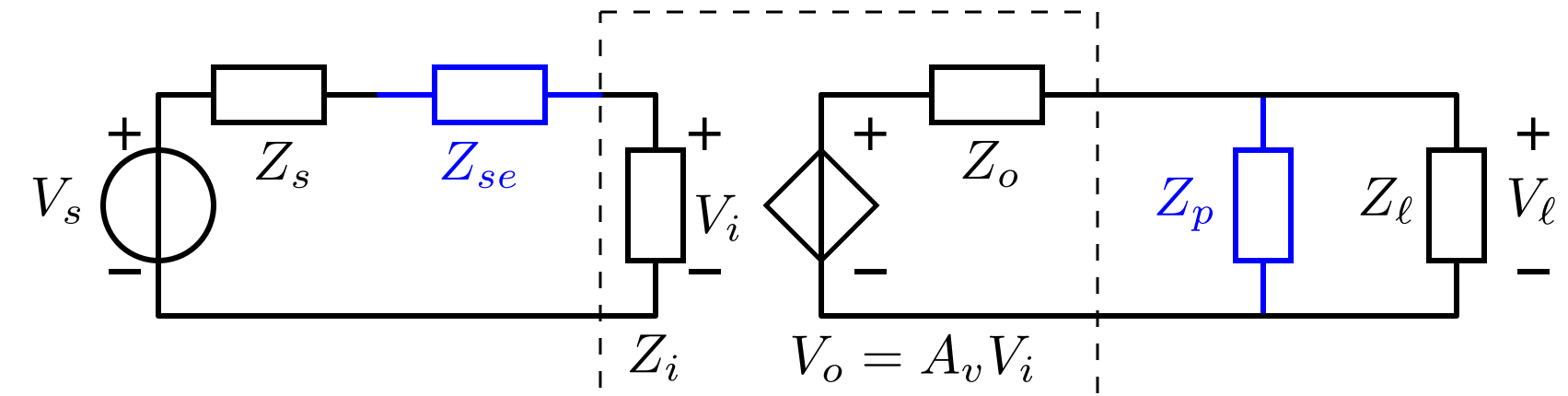


**Brute-force:** Insert **dominant**, high-accuracy and linear impedances in the signal path:

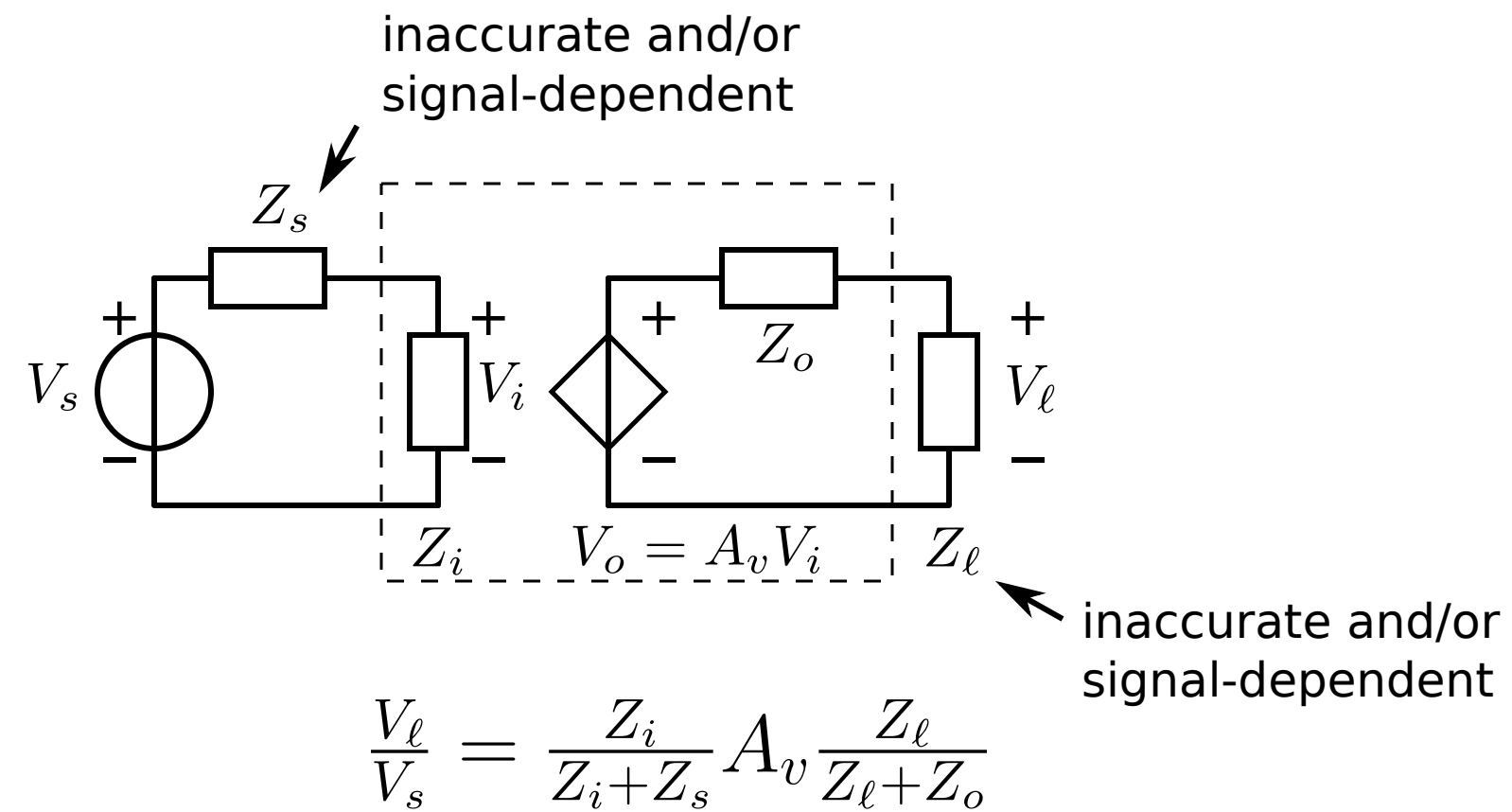
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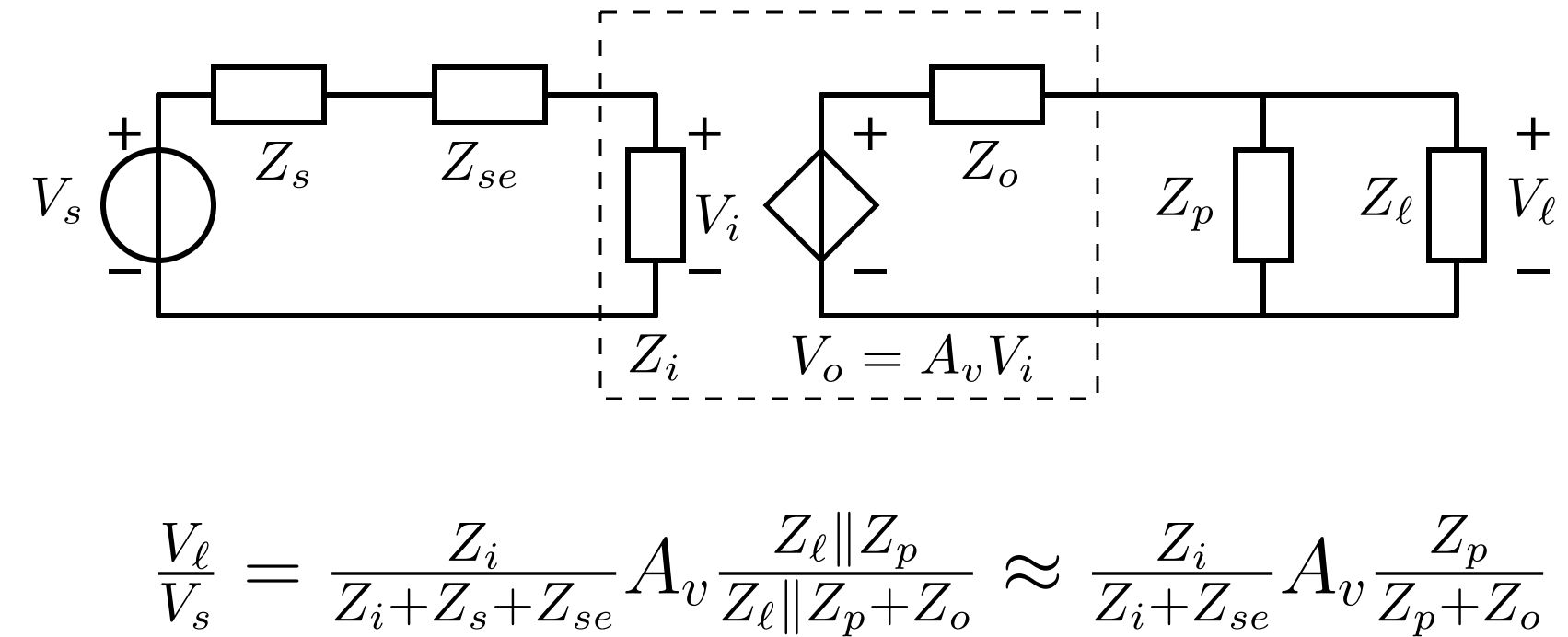
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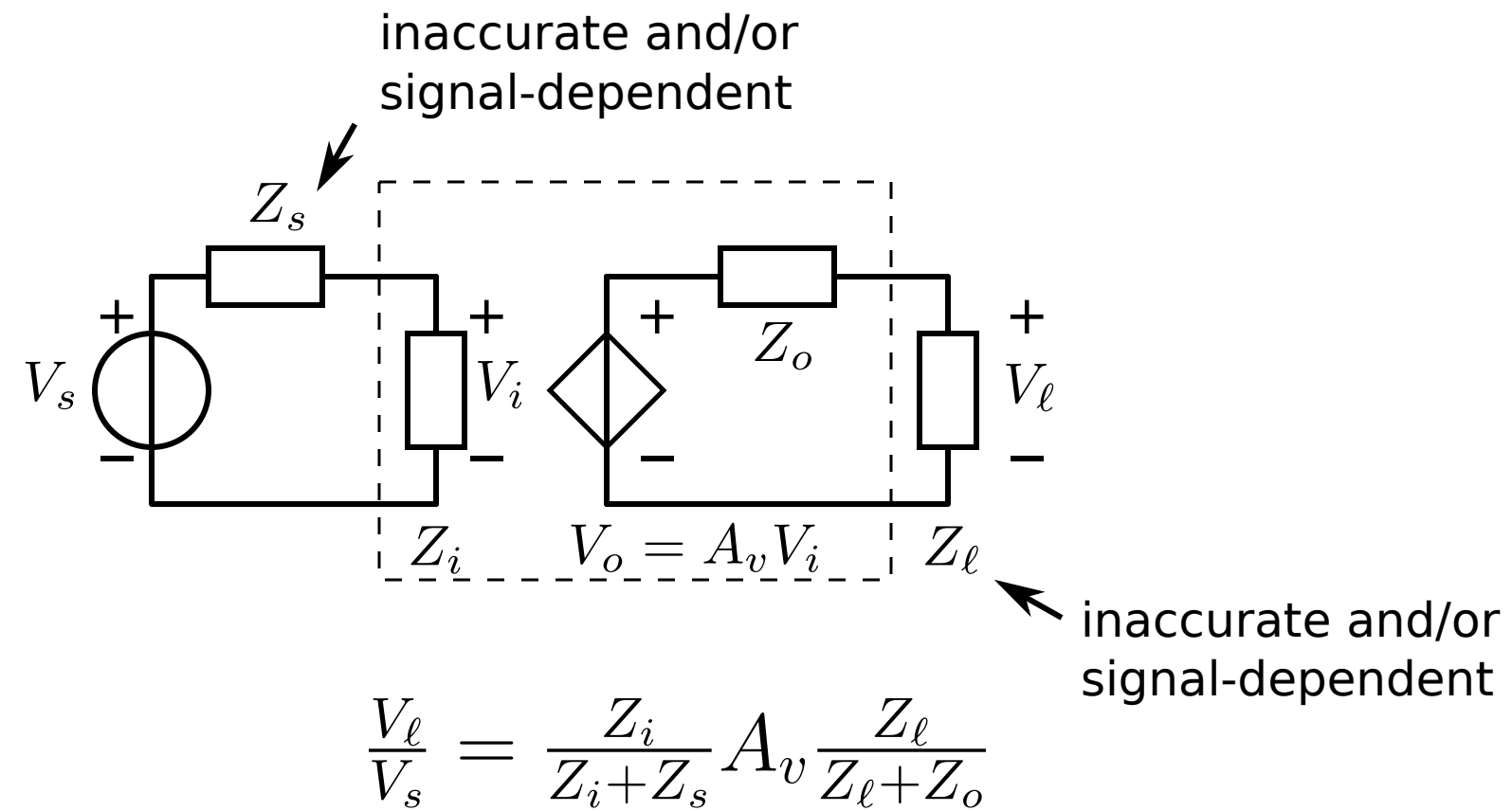
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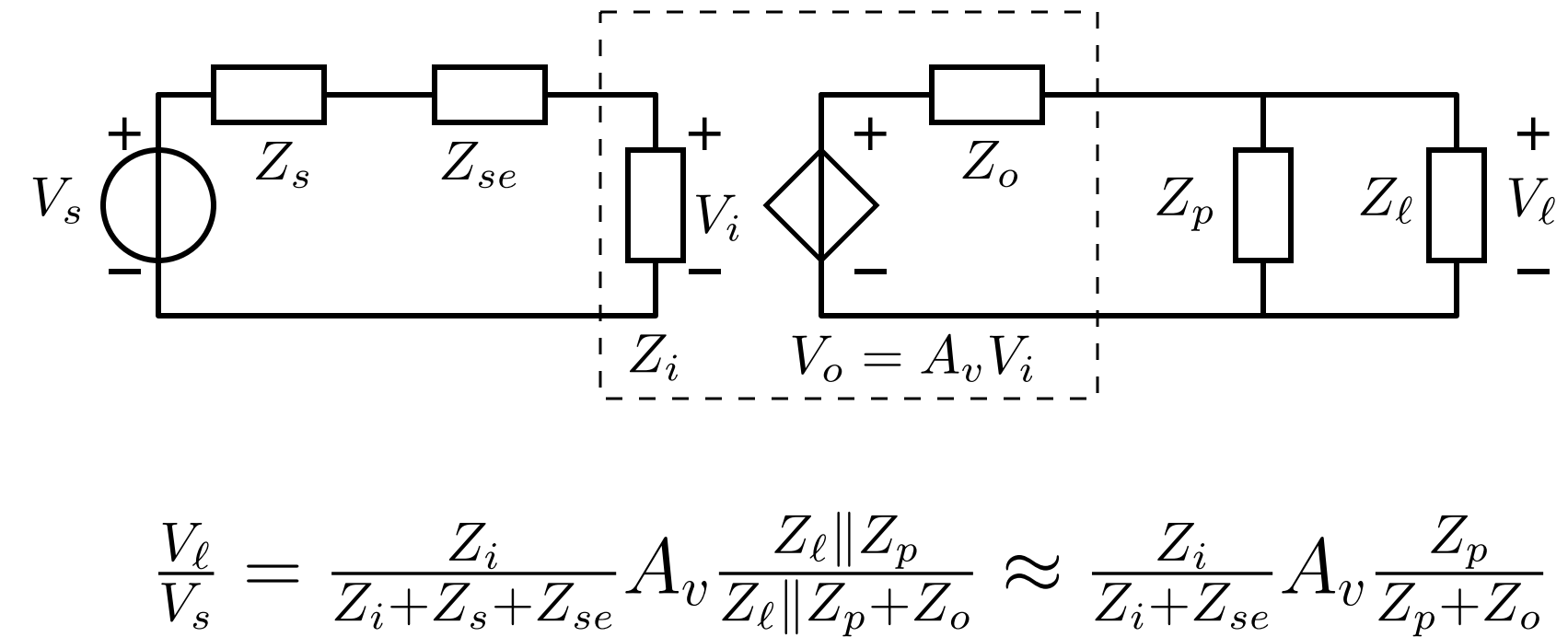
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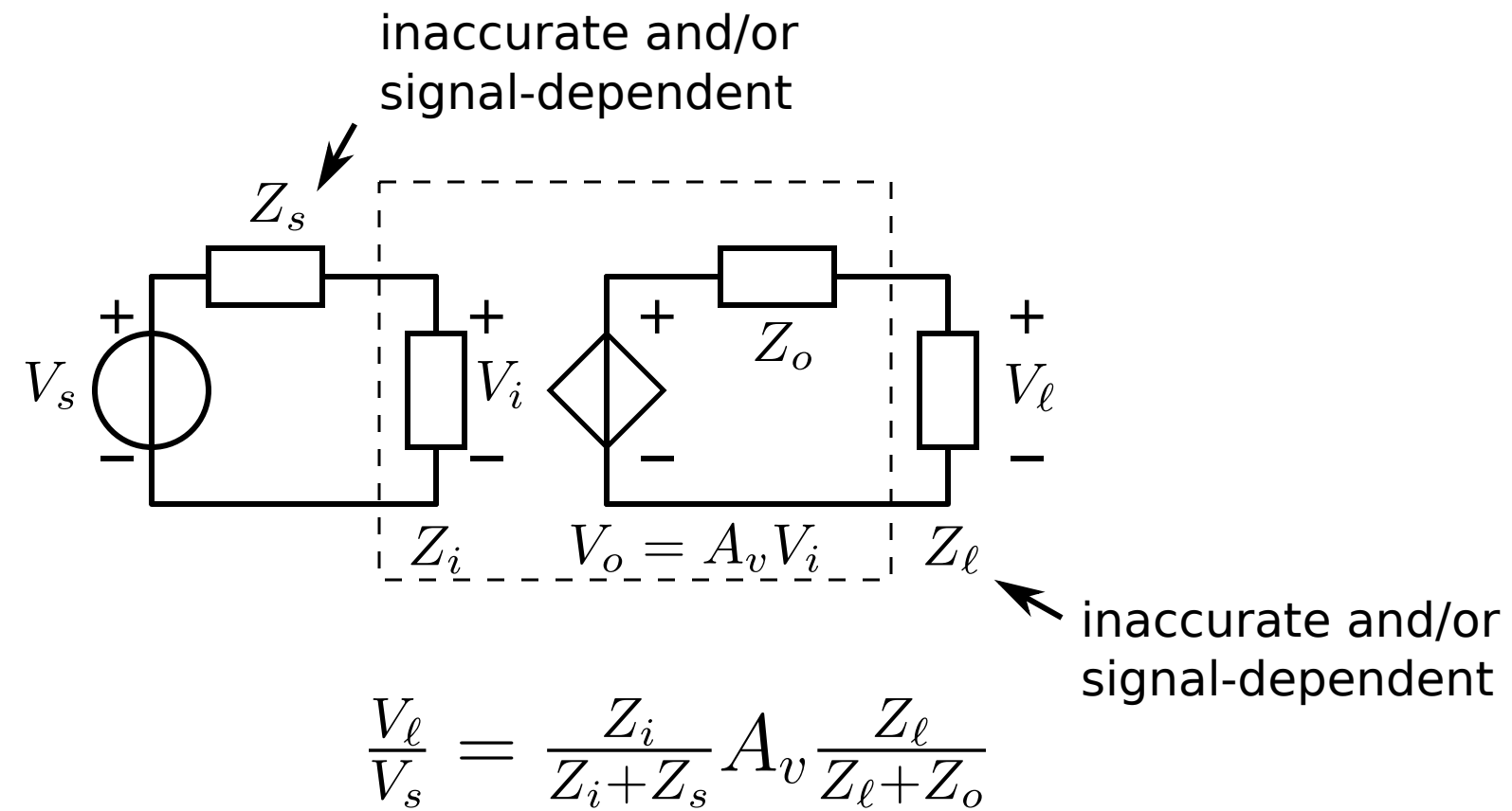


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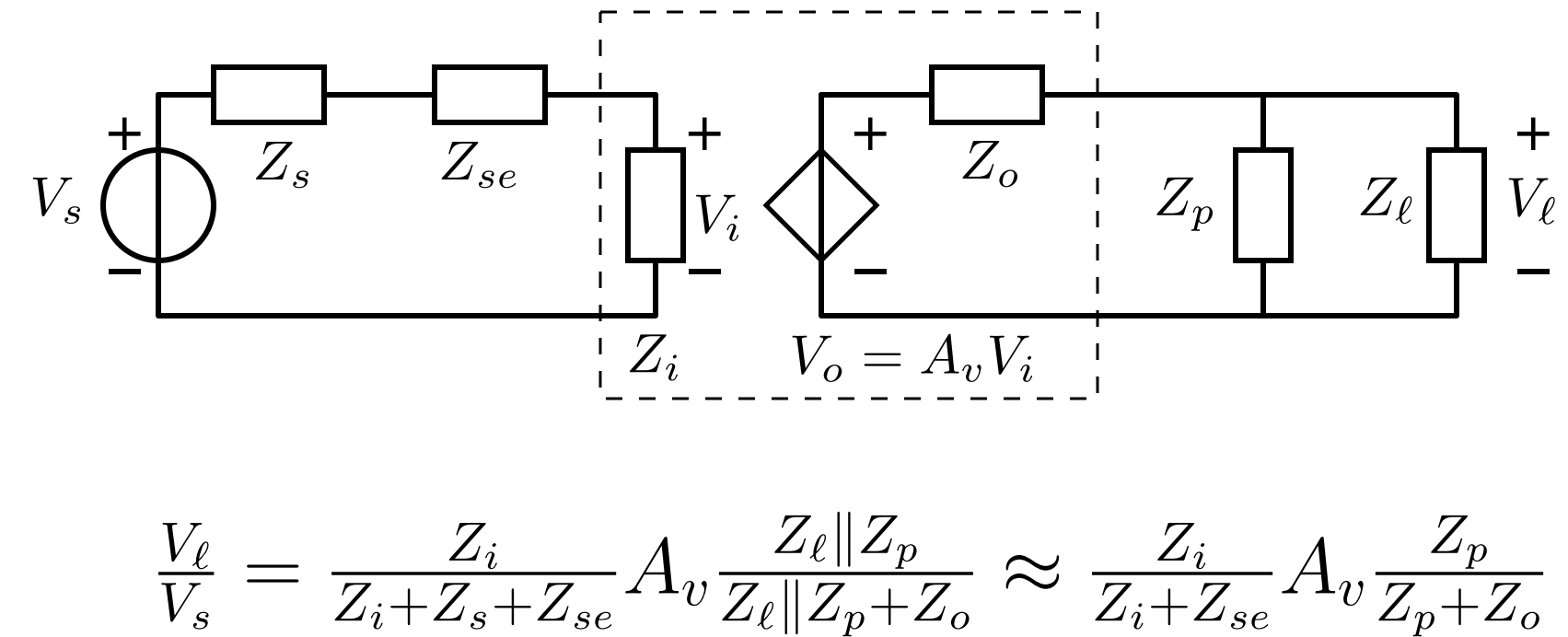
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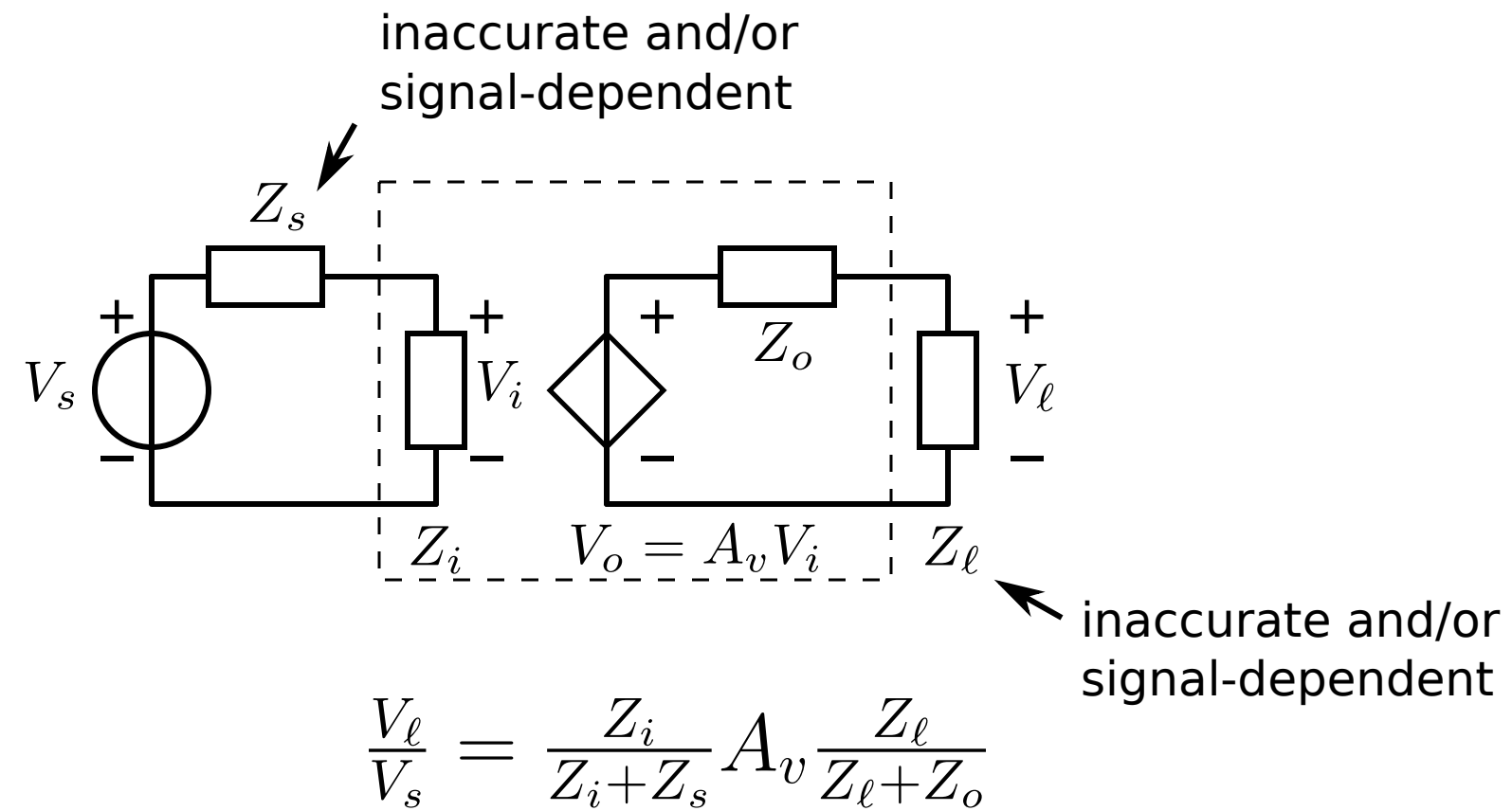
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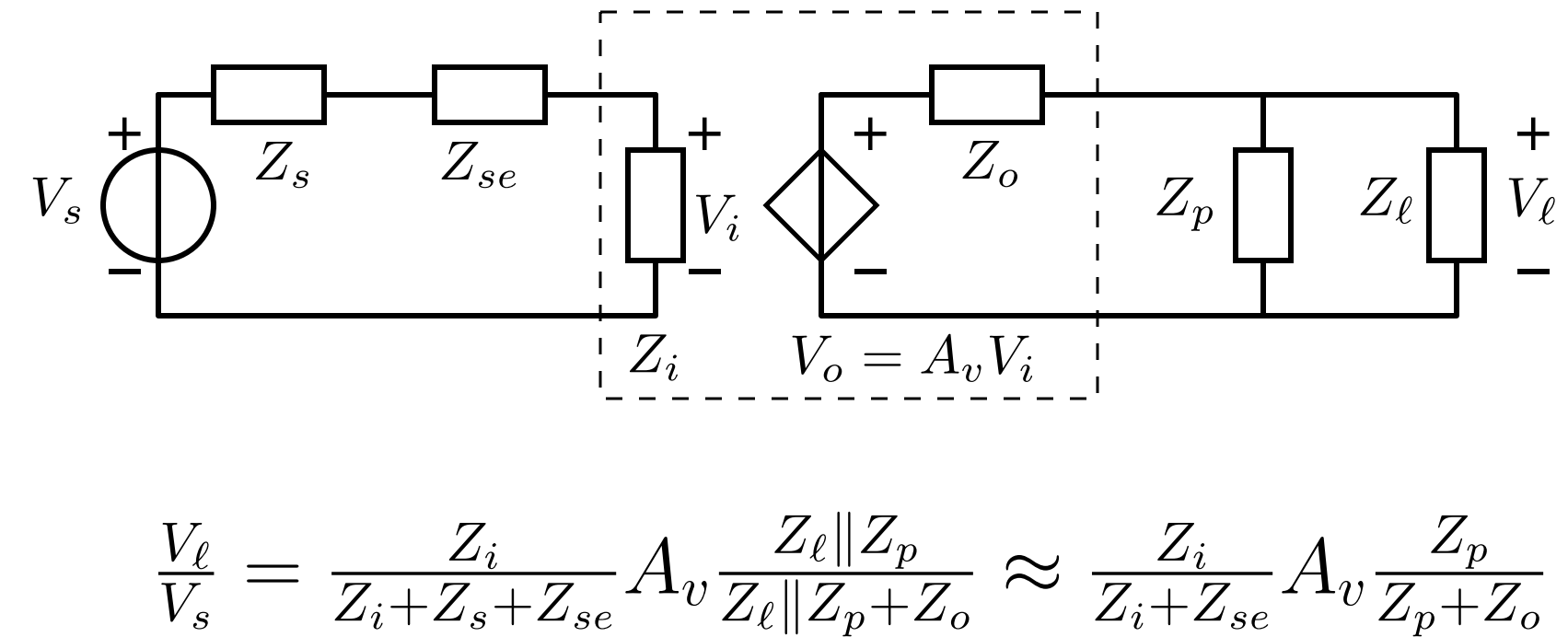
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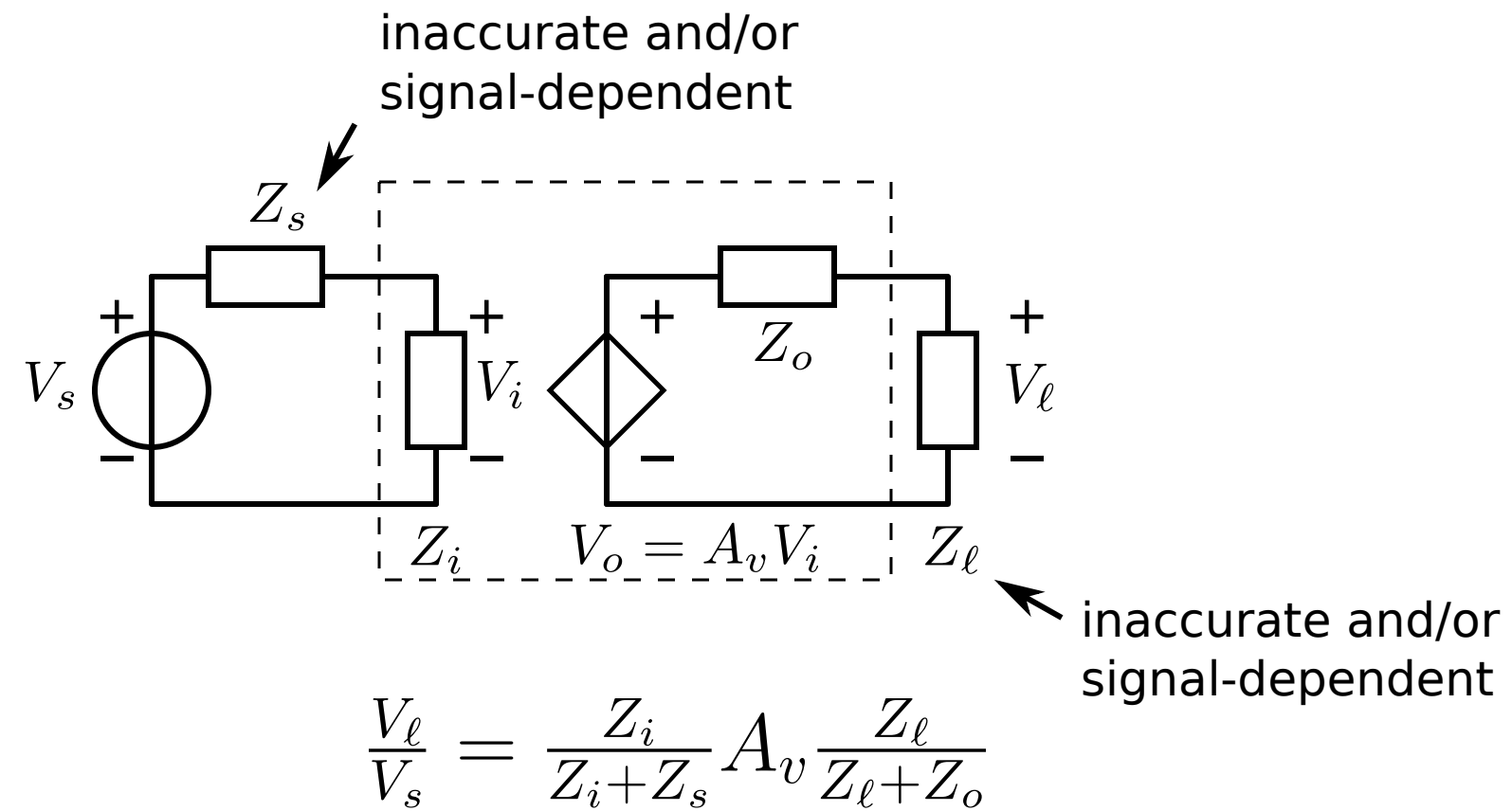
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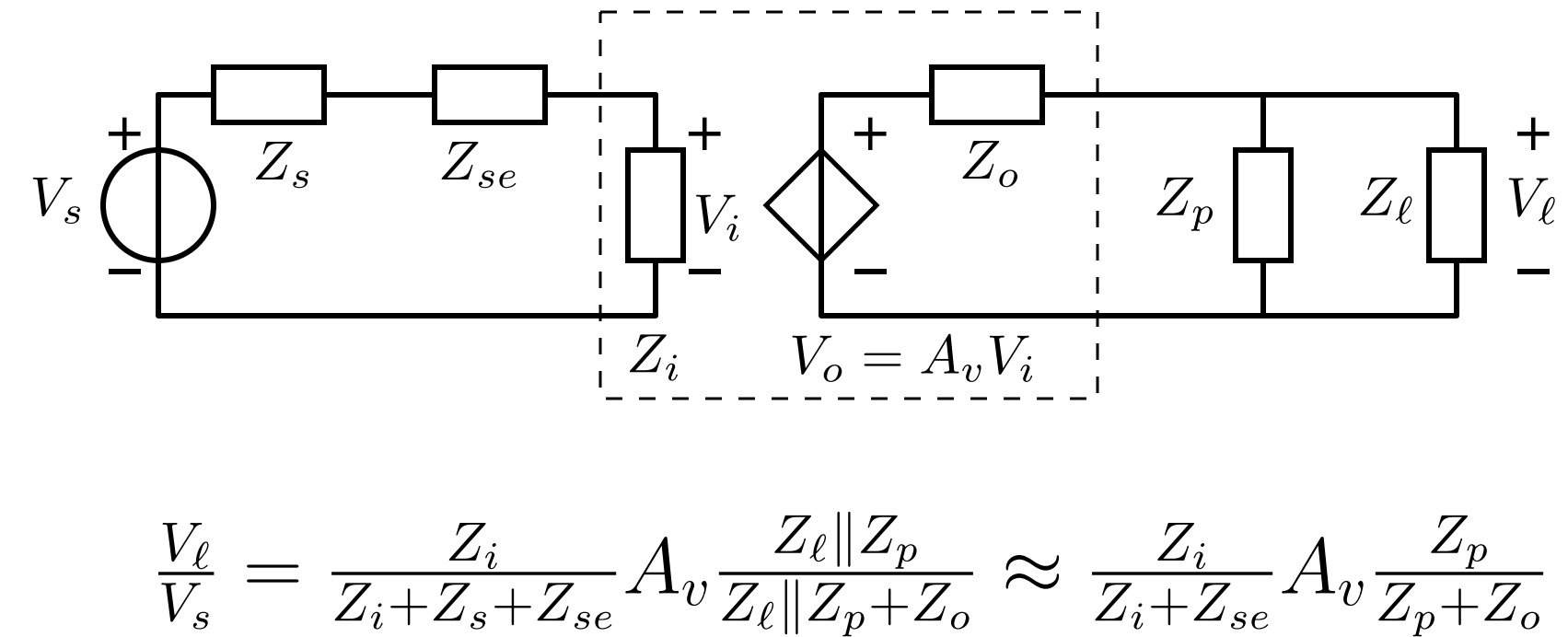
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reduction of the signal to noise ratio
- At the load:  
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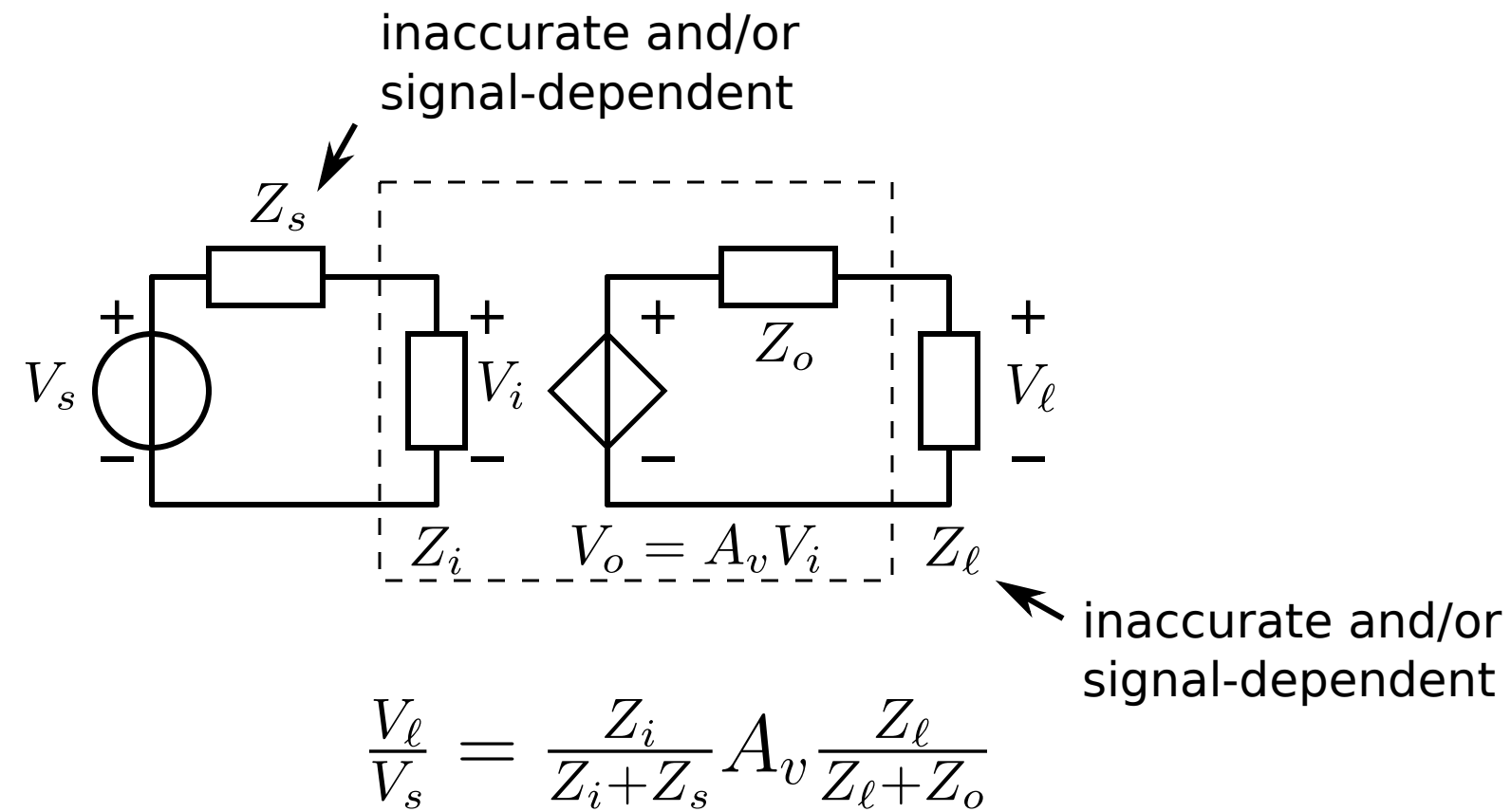
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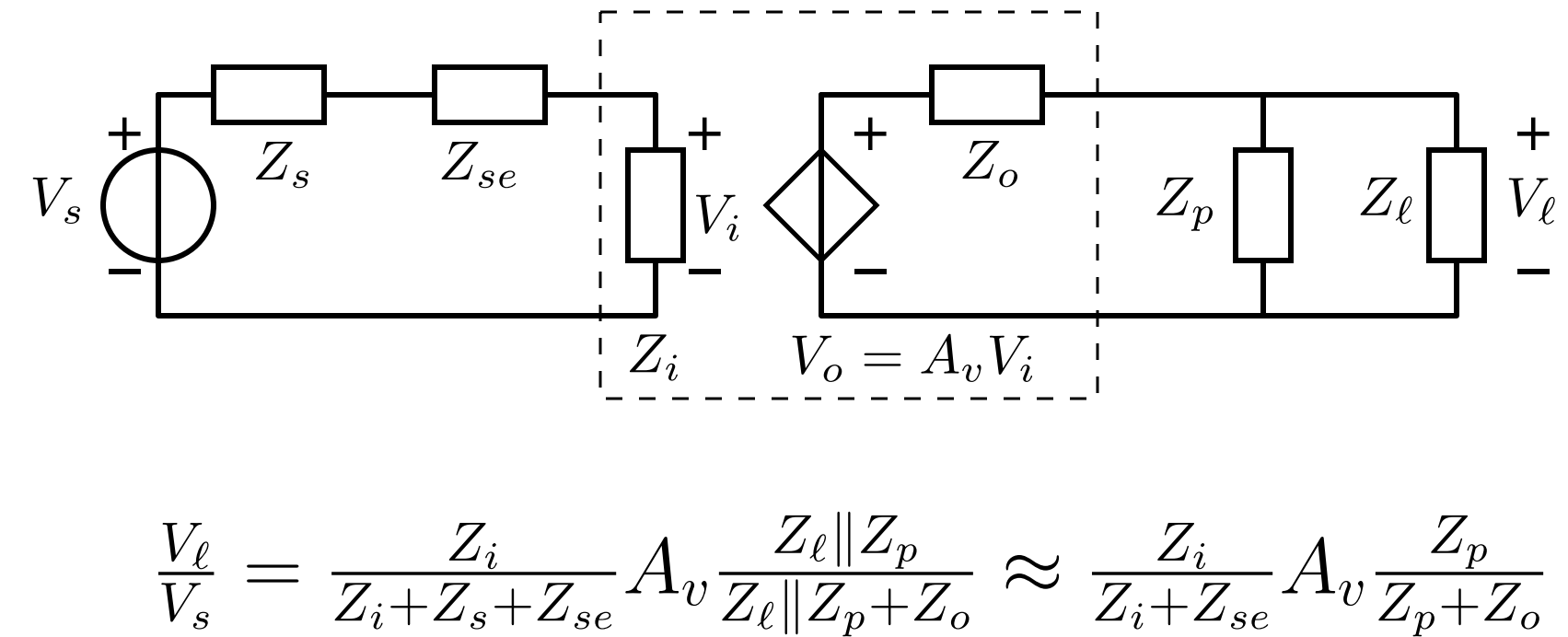
- ☹️ At the source:  
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- ☹️ At the load:  
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- ☹️ Source-to-load transfer:  
reduced as a result of attenuation



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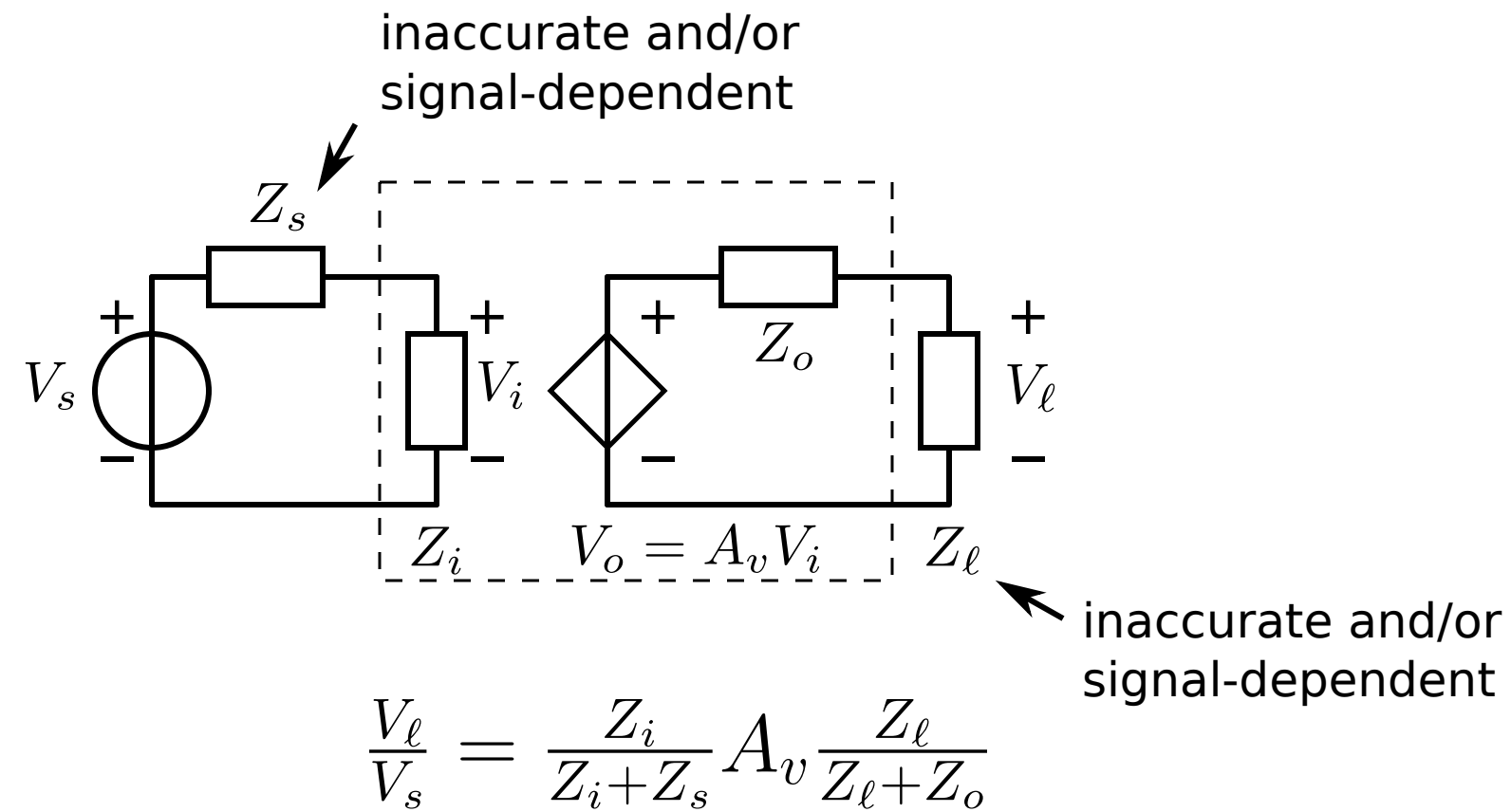
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**Conclusion:** Strong interaction between:

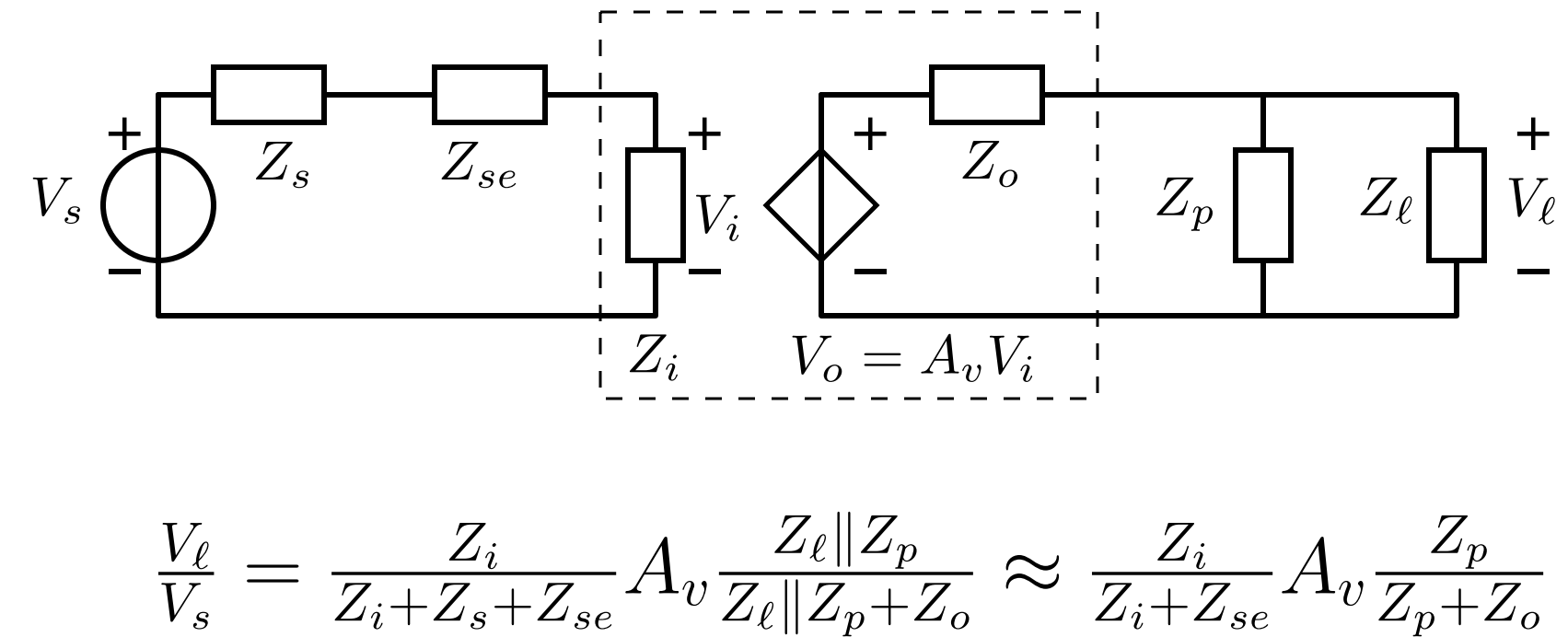
- accuracy and noise addition
- accuracy and power inefficiency
- accuracy and source-to-load transfer

- ☹️ At the source:  
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**Example:** **Brute-force** reduction of the influence of source and load impedance variations on the accuracy of the transfer of a voltage amplifier



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**Orthogonality:** See: "orthogonalDesignNegativeFeedbackAmplifiers.svg"

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