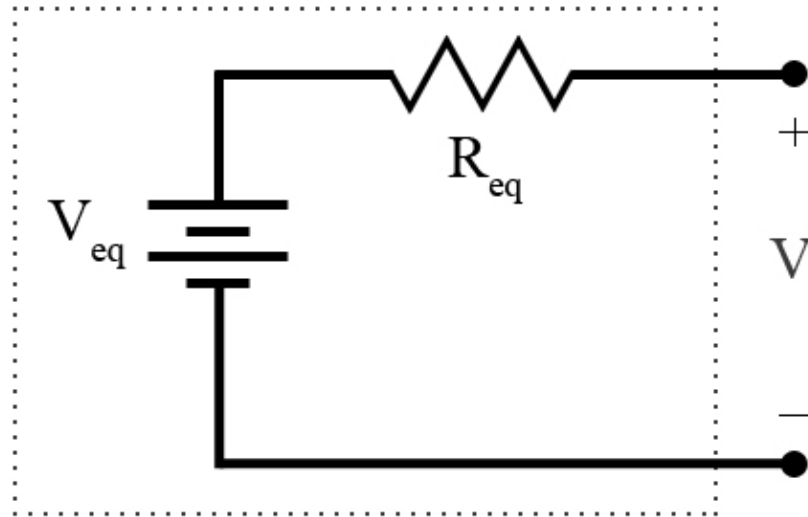


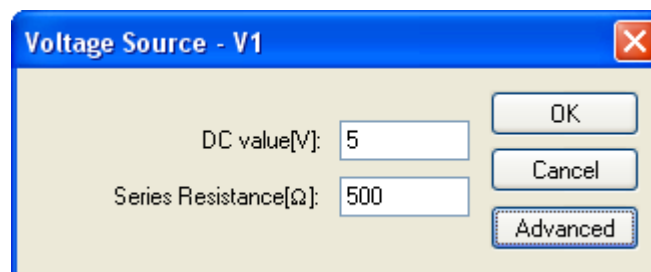
Simulating a non-ideal voltage source

The characteristics of non-ideal (real) voltage source can be modeled by two components, an equivalent ideal voltage source and an equivalent series resistance as shown below:



Initially when a voltage or current source is inserted in LTSpice it is defaulted as an ideal source. A source is considered ideal when the equivalent series resistance (R_{eq}) is zero or considered negligible. Lab power supplies are an example of a device with nearly zero equivalent resistance, and can be considered ideal. Batteries and solar cells however are both examples of non-ideal voltage sources, to accurately model them their internal series resistance must be included.

After building the circuit to be analyzed, include the series resistance in LTSpice by right clicking on the voltage source and enter the value in the field "Series Resistance[Ω]."



In this example 500 ohms is included as the internal series resistance. The voltage source is now ready to be analyzed as a non-ideal component.

