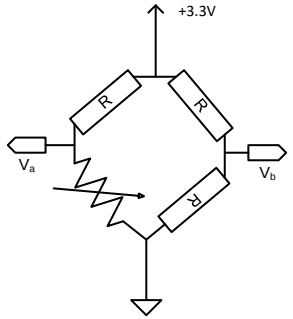
* Classic Wheatstone bridge



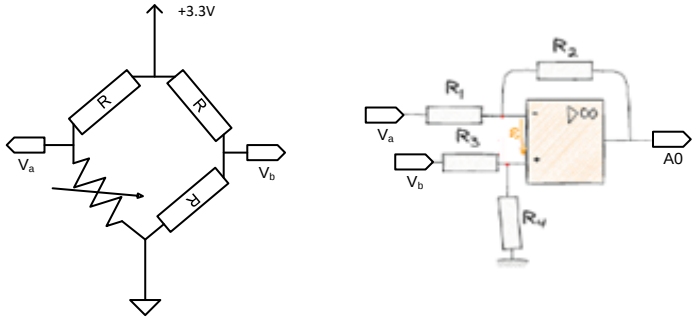
$V_m = V_a - V_b$

Advantages:
- Simple

Disadvantage:
- 2 analog inputs
- May be suitable if original voltage range is small

Conclusion:
Simplistic solution well suited if large voltage range.

* Wheatstone bridge with subtractor



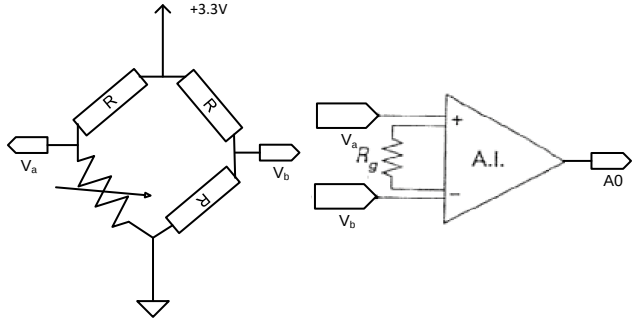
$V_m = V_a - V_b$

Advantages:
- One analog input

Disadvantage:
- + Complex

Conclusion:
More complex but well suited if voltage range small.

* Wheatstone bridge with instrumentation amplifier



$V_m = V_a - V_b$

Advantages:
- 1 analog input
- If interference better (see next course)

Disadvantage:
- + Complex

Conclusion:
(see next course)

Conclusion:
In our case, the use of an instrumentation amplifier is perfect. It requires only one analog input, and allows better measurement of its value without interference.

ÉCOLE NATIONALE D'INGÉNIEURS DE BREST

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