Review: CMRR Limit
A Related Problem

- What if $I_L < I_{\text{tail}}/2$?
- Does (typical) feedback solve this?

Solution: Common-Mode Feedback
Adjusting Common-Mode

- Really only two knobs:
- Knob A: adjust load current
- Knob B: adjust tail current

Knob A vs. Knob B
Common-Mode Sensing

- Simplest CM sensor: pair of resistors
- How to pick value of R?

Isolated Sensing

- Works well as long as stay in the linear range of the “diff. pair”
  - Otherwise $V_{\text{sense}}$ tracks just one side
Capacitive Sensing

- Avoids DC loading
  - But can’t fix DC (biasing) concerns
  - And does add extra capacitive loading

Common Implementation
Methodology Implications (Noise-Limited)

Methodology Implications (GBW-Limited)