

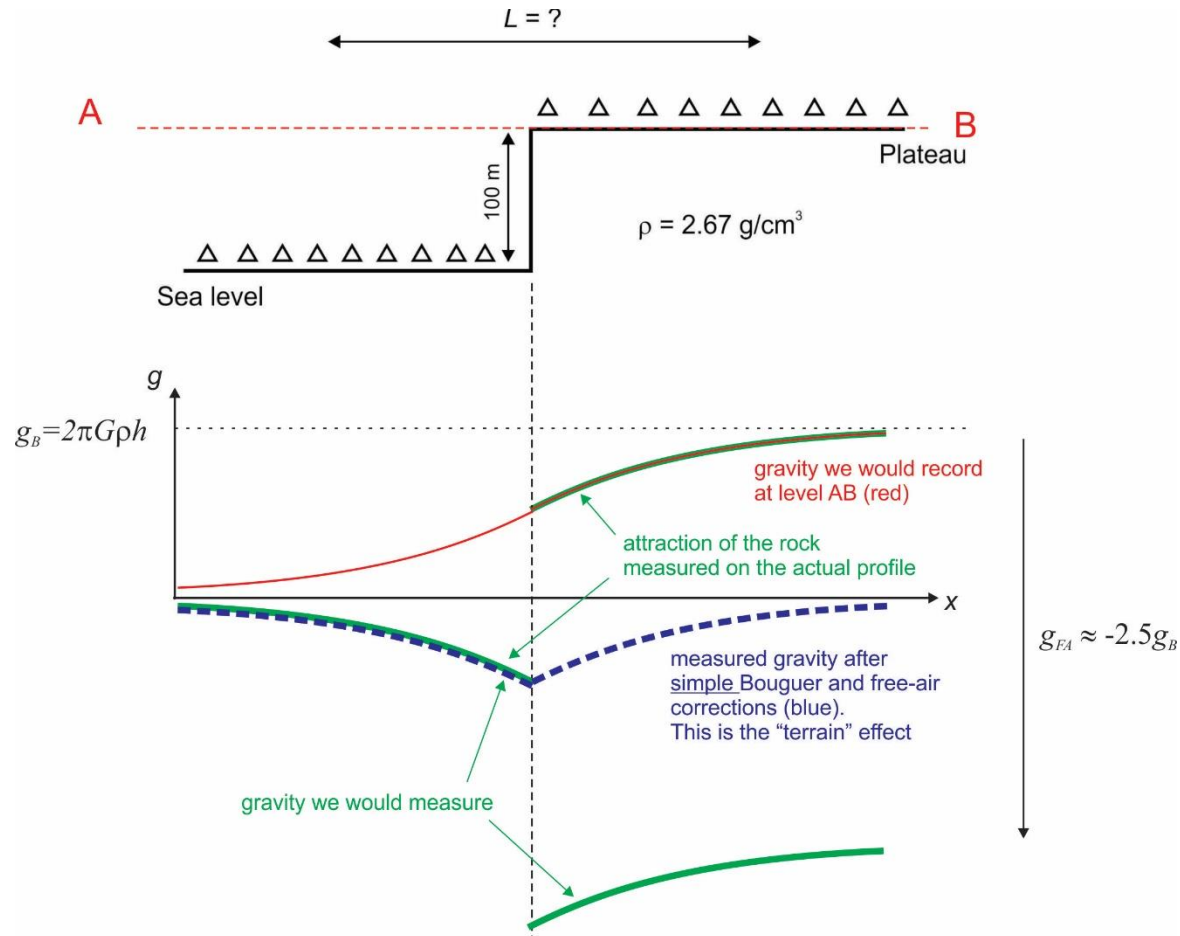
# Discussion of GEOL384/334

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- ▶ Discussion of two instructive problems from midterm exam
- ▶ Final exam format

# Midterm problem about gravity

- ▶ In the midterm, there was an instructive problem which is worth reviewing:



# Midterm problem about resistivity

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- ▶ Also note the simple but useful problem (for GEOL334) about deriving the geometry factor for Wenner array from the expression for the potential
  - ▶ Please review and try solving it (even Geol384)
  - ▶ Just note the key principle of electrical imaging: the measured “voltage” between electrodes M and N is the difference of the electric potentials at these points:

$$U = \varphi(M) - \varphi(N)$$

- ▶ ... and each of the potentials is a sum of the potentials created by each of the current electrodes. Electrode A injects current  $+I$  and creates potentials

$$\varphi = \frac{I\rho}{2\pi \times (\text{distance from A to M or N})}$$

- ▶ ... and electrode B injects current  $-I$  and creates potentials

$$\varphi = \frac{-I\rho}{2\pi \times (\text{distance from B to M or N})}$$

- ▶ Thus, the problem (for any array) is only in evaluating the four distances (A-M, A-N, B-M, B-N) and doing summations and subtractions

# Final exam

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- ▶ **Preparation:**
  - ▶ Review lectures marked with ‘\*’ with focus on basic ideas and relations, as in the discussion of the gravity example in the preceding slides
  - ▶ Review the labs! The questions should principally focus on lab or field situations
  - ▶ The contents will include the whole course, including what was used in the midterm
    - ▶ There will likely be little or no questions about seismics (because we had no seismic labs)
- ▶ **Format:**
  - ▶ The format will be similar to the midterm – several problems probing for basic principles. No significant derivations or math
  - ▶ I am considering making an option for automatic final grade based on the midterm and lab results:
    - ▶ **Students who are satisfied with their class grade average from the midterm and labs, will not have to write the final exam**
    - ▶ If you elect to write the final exam, its result will not decrease the grade average.
- ▶ I will try sending your current grade averages and final exams to you by **December 9**, to be completed by **December 14 (Geol334)** and **December 15 (Geol384)**