

**Meteo 1 Lecture 10**  
**CH 13 GLOBAL CLIMATE**

- **Paleoclimate Studies and Techniques**
  - Glacial Studies
  - $^{18}\text{O}$  and  $^{16}\text{O}$  Isotopic Ratio (Glacial Cycles and Sea Level)
  - Dendrochronology, Coral Studies, Ice Cores
- **Causes of Climate Change**
  - Plate Tectonics
  - Earth's Orbit
  - Volcanic Eruptions
  - Anthropogenic Emissions GH Gasses
  - Oceanic Responses (Temp.,  $\text{CO}_2$  conc.)
- **Climate Change by Natural Events**
  - Plate Tectonics and Mountain Building
    - Theory of plate tectonics
    - Mountain interaction with airflow and ocean currents
  - Variation on the Earth's Orbit
    - Milankovich Theory
      - Eccentricity
      - Precession
      - Obliquity
- **Climate Change by Humans**
  - Recent Global Warming: Perspective
    - Since the beginning of the 20<sup>th</sup> century average global surface temperature has increased 0.8°C
  - Radiative Forcing Agents
    - Carbon dioxide and other greenhouse gases disrupt radiative equilibrium, forming an increase in temperature
- **A Report of Working Group I on the Intergovernmental Panel on Climate Change**
  - [http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4\\_wg1\\_full\\_report.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4_wg1_full_report.pdf) 112 MB
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