

Suggested Research Paper Topics

Physical meteorology covers a wide variety of topics. You may select your research topic from the following list of suggestions or come up with a topic on your own. Please do not feel obligated to choose something from this list, but if you would like to study something else, please make sure that it falls within the scope of physical meteorology by first running it by me before you begin. I hope that you learn something interesting!

- Noctilucent clouds
- Hail
- Effects of the surface energy balance on ...
- Lightning detection
- Effect of electric fields on atmospheric halos
- Snow crystals
- Theories of charge separation in thunderstorms
- Greenhouse effect (with a focus on methane, water vapor, etc.)
- Aurora borealis
- Ozone depletion: Causes and effects
- The Antarctic ozone hole
- Solar radiation and clouds
- Doppler radar (anomalous propagation, dual-polarization, false echoes, etc.)
- Study, formation, and suppression of hailstones
- Effect of clouds on longwave radiation
- Fata Morgana
- Detecting water phase differences with radar
- Thunder
- Lightning (sprites, elves, blue jets, ball, positive, etc.)
- Ionosphere
- Cloud effects on the Earth's energy budget
- Green flash
- LIDAR and current research on its usefulness for meteorological applications
- Optical phenomena
- Drop size distributions