Project Title: Air Quality Monitoring in the Coastal Environment of Miami

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Description of project:

In this project, the air quality in Miami has been monitored continuously on the campus of the Rosenstiel School of Marine and Atmospheric Science. Atmospheric pollutants include ozone (O_3), nitrogen oxides (NO_x), carbon monoxide (CO), and sulfur dioxide (SO_2) will be measured with a series of environmental analyzers. Two important acids, nitrous acid (HONO) and nitric acid (HNO_3), will also be measured using long path absorption photometry. The instruments will be calibrated and characterized in the laboratory prior to the deployment to monitor the air quality. The student participating in this project will learn basic knowledge of atmospheric science and air pollution, operate some environmental instruments, and use computer programs (Excel, Matlab) to analyze the collected data. Results from this project will be presented in science meetings and may be published as peer-review papers.

Specific requirements for the student:

1. The student should have interests in air quality monitoring and physical/chemical laboratory experiments.
2. Knowledge in atmospheric science and analytical chemistry will be a plus.

Suggested reading materials:

1. D. J. Jacob, Introduction to Atmospheric Chemistry, Princeton University