

MMM SEMINAR SERIES



Smartphone Pressure Data: Statistical Characteristics, Bias Correction, and Applications in Analysis and Forecasting

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Smartphones are now commonly used, with ownership ranging from 30 to 70 percent of the population in numerous countries. With GPS and pressure sensor installed, smartphones can measure ambient air pressure, and have the potential to be used as meteorological observations. Our recent studies have shown that the pressure of smartphones can be used to describe the strength and location of large-scale vortex, as well as mesoscale surface high and low during thunderstorm events. Nevertheless, addressing the quality issues of smartphone barometric data owing to human activity and other factors remains a great challenge. Our study indicated that a machine-learning technique could significantly improve the usability of the smartphone data. Since smartphone users are mostly concentrated in urban areas, significantly higher-density pressure coverage is achieved than the conventional surface networks in large cities. However, can these high-density data improve the forecasting ability of weather-related disasters? This presentation will introduce the barometric pressure data observed by smartphones collected from Moji weather app, the bias correction process, and its applications in analysis and forecasting via case studies.

Thursday, 16 November 2023, 2:00pm

Refreshments 1:45pm

Please also join colleagues for refreshments and informal discussion after the seminar until 3:30pm

NCAR-Foothills Laboratory, 3450 Mitchell Lane

FL2-1022, Large Auditorium

Seminar will also be live webcast

<https://operations.ucar.edu/live-mmm>

Participants may ask questions during the seminar via Slido.