Manual macrophotography of precipitation particles

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Motivation

Goal:
To document the type and shape of precipitation particles during the cold season

Background:
• Used the same setup as in Gibson and Stewart (2007)
• Collect and photograph systematically precipitation particles
• Analyse the photos manually and automatically
Manual precipitation observations

• Record manually the type of precipitation
• Take picture of precipitation particles in a systematic manner
• Collect precipitation type as often as possible to capture transitions
Macrophotography setup

- **DSLR Camera**
- **60 mm macro lens**
- **Circular flash**
- **Precipitation collection pad: board covered of black velvet**
- **Scanning mechanisms**
Macrophotography setup in the field

Downtown Montreal, Quebec, Canada

Canadian Rockies, Alberta, Canada
Collection of precipitation particles

• Observation frequency:
  • 10 minutes

• Collection of hydrometeors:
  • Particles should not touch each other
  • Exposition time depends on the precipitation rate
  • Add the box during windy conditions

• Photograph the collection pad:
  • Insertion of the pad below the camera
  • Use the flash
  • Take 9 pictures systematically

★ Make sure the collection pad remains relatively cold. ★
Some examples
Ice pellets photographed

Lachapelle and Thériault, 2021 (Under Review)
Summary

- Manual photography allows to observe particles that are difficult to detect using automatic instruments.
- Precipitation types can change quickly during near-0°C storms.
- Precipitation types often occur in combination, which will be possible to analyse with the manual observations and photos.
Thank you!
Questions?