

Explorative Study on Semantically Resonant Colors for Combinations of Categories with Application to Meteorological Data

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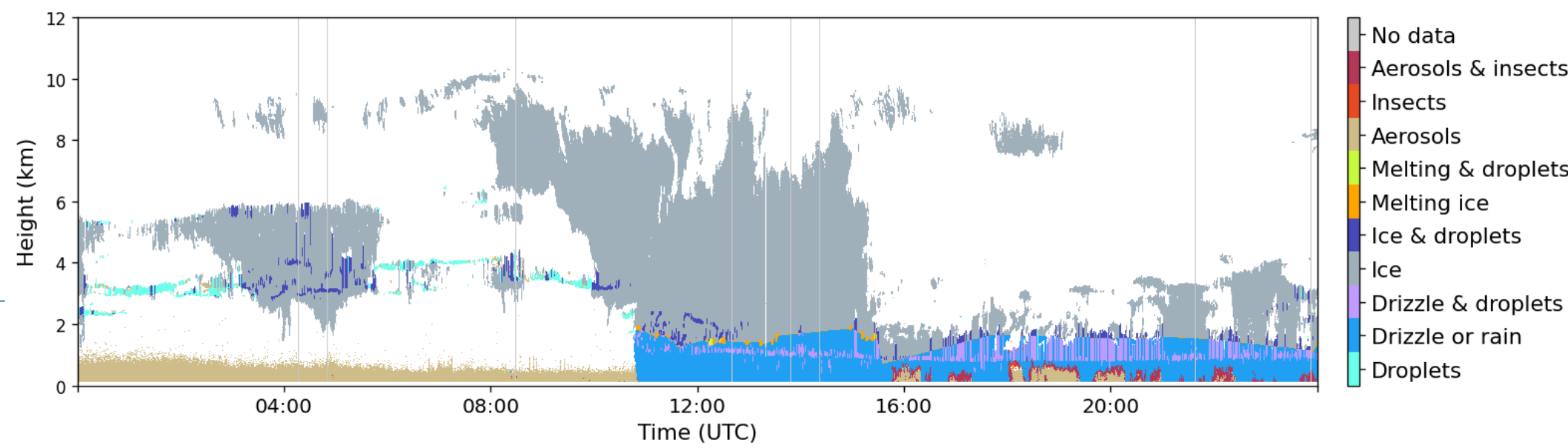
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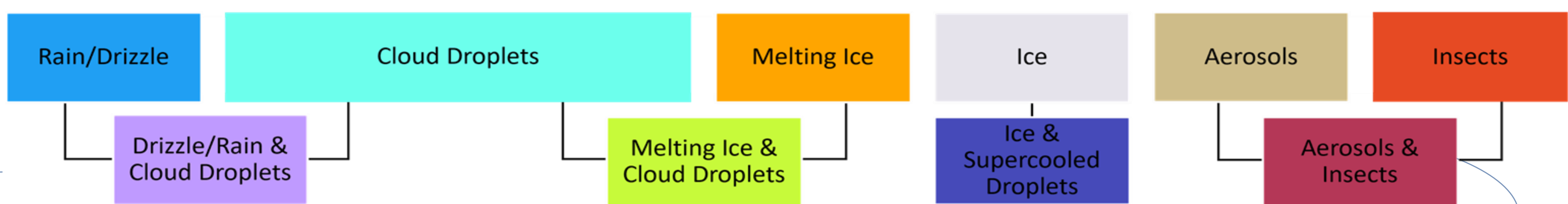


Motivation



- Colors are not representing semantics (e.g., melting ice is not orange.)
- Colors of combined categories do **not represent individual category** components (e.g., **insects**, **aerosols** and **their combination**.)

Original Colorscheme



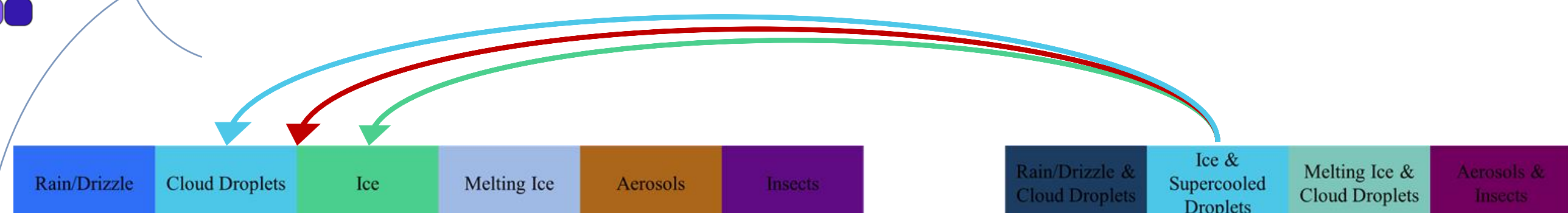
Research Question and Experiment

- We wanted to find semantically resonant for combinations of categories.
- How do the colors of combined categories relate to the colors of individual categories?

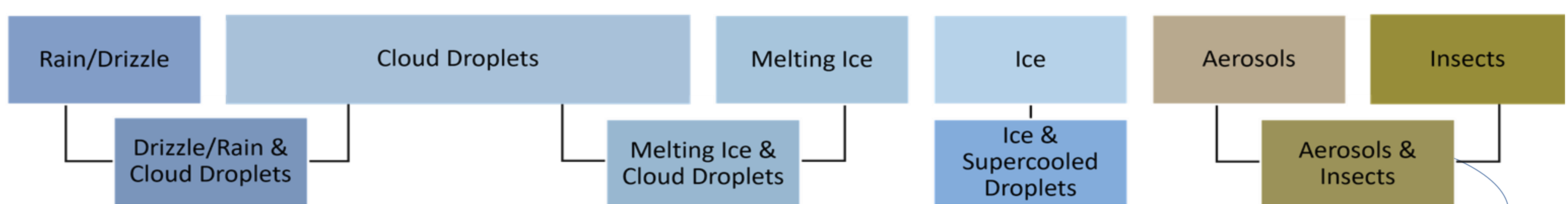
- Asked participants to **assign a color** to each of the six meteorological categories as well as the four combined categories.

Resulting Data

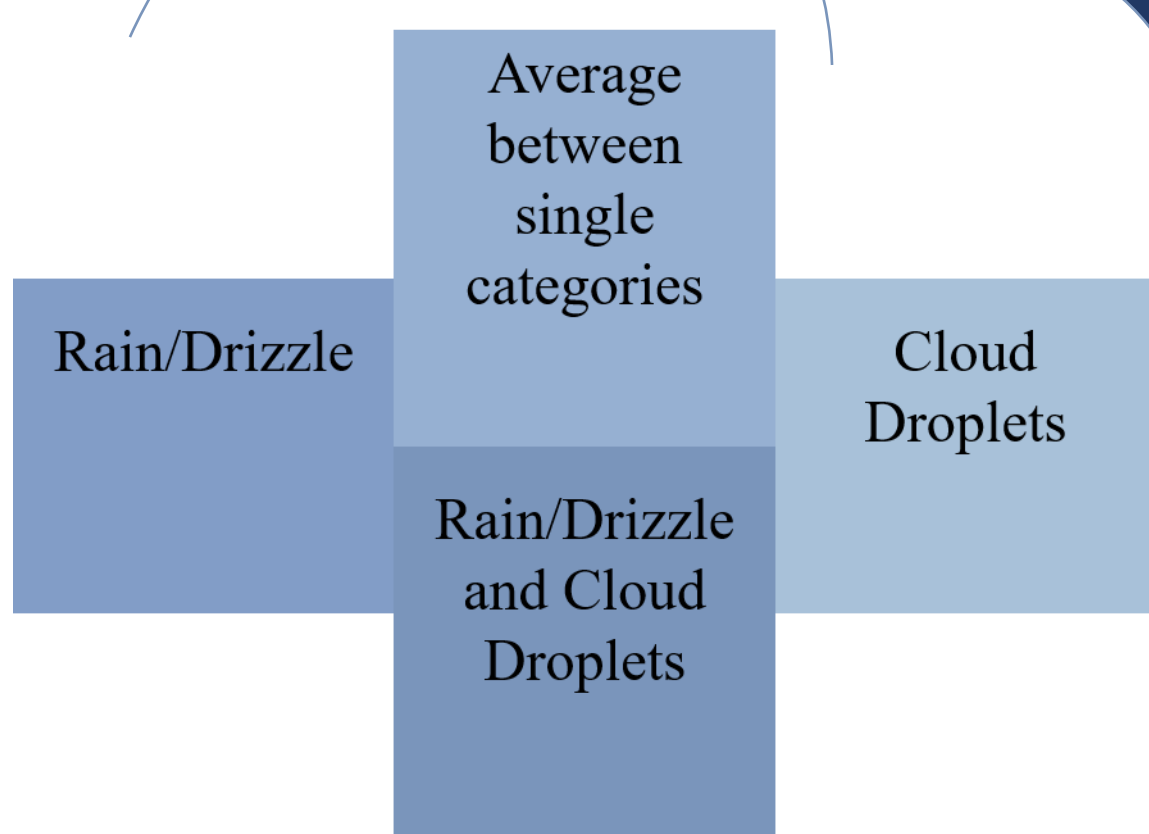
- Example-result of one participant.
- Participants more **oriented toward average color value between two individual categories** than toward two **original colors**.



Resulting Average Colorscheme



Further Indications



- Color for combined categories was **darker than the average** of the two chosen colors for individual categories.

Future Work

- In further studies we aim to find proof of our indications.
- We also aim to formulate **generally applicable rules** for similar cases.

References

- LIN S., FORTUNA J., KULKARNI C., STONE M., HEER J.: Selecting semantically-resonant colors for data visualization. In Computer Graphics Forum (2013)
- SAMSEL F., TURTON T., WOLFRAM P., BUJACK R.: Intuitive colormaps for environmental visualization. In Workshop on Visualisation in Environmental Sciences (EnvirVis)(2017)
- TENNEKES M., DEJONGE E.: Tree colors: color schemes for tree-structured data. IEEE transactions on visualization and computergraphics 20 (2014)