

# Claudia Mignani

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## EDUCATION:

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| PhD | <b>University of Basel, Switzerland</b> , Environmental Sciences (with honors)<br>Thesis: <a href="#">Ice formation at moderate supercooling in mixed-phase clouds and its link to precipitation</a> | 2021 |
| MSc | <b>Swiss Federal Institute of Technology (ETH) Zürich, Switzerland</b> ,<br>Environmental Sciences, Major in Atmosphere and Climate, Minor in Biogeo-chemistry                                       | 2014 |
| BSc | <b>ETH Zürich, Switzerland</b> , Environmental Sciences  | 2012 |

## PROFESSIONAL EXPERIENCE:

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| Postdoctoral fellow, <b>Colorado State University</b> , United States  | 04/2022 – Present |
| Research Assistant, <b>University of Basel</b> , Switzerland   | 04/2017 – 11/2021 |
| Scientist (60%), <b>Swiss Federal Laboratories for Materials Science and Technology (EMPA)</b> , Switzerland | 06/2016 – 03/2017 |
| Visitor Guide (40%), <b>Swiss Science Center Technorama</b> , Switzerland                                    | 05/2016 – 03/2017 |
| Project Assistant, <b>MSB Climate Science Communication GmbH</b> , Switzerland                               | 08/2015 – 05/2016 |
| Natural Catastrophe Modelling Analyst, <b>PartnerRe</b> , Switzerland  | 02/2015 – 07/2015 |

## PEER-REVIEWED PUBLICATIONS:

Wieder, J., Ihn, N., **Mignani, C.**, Haarig, M., Bühl, J., Seifert, P., Engelmann, R., Ramelli, F., Kanji, Z. A., Lohmann, U., and Henneberger, J.: Retrieving ice nucleating particle concentration and ice multiplication factors using active remote sensing validated by in situ observations, *Atmos. Chem. Phys.*, 22, 9767–9797, <https://doi.org/10.5194/acp-22-9767-2022>, **2022**.

Conen, F., Einbock, A., **Mignani, C.**, and Hüglin, C.: Measurement report: Ice-nucleating particles active  $\geq -15^{\circ}\text{C}$  in free tropospheric air over western Europe, *Atmos. Chem. Phys.*, 22, 3433–3444, <https://doi.org/10.5194/acp-22-3433-2022>, **2022**.

Wieder, J., **Mignani, C.**, Schär, M., Roth, L., Sprenger, M., Henneberger, J., Lohmann, U., Brunner, C., and Kanji, Z. A.: Unveiling atmospheric transport and mixing mechanisms of ice-nucleating particles over the Alps, *Atmos. Chem. Phys.*, 22, 3111–3130, <https://doi.org/10.5194/acp-22-3111-2022>, **2022**.

Georgakaki, P., Bougiatioti, A., Wieder, J., **Mignani, C.**, Ramelli, F., Kanji, Z. A., Henneberger, J., Hervo, M., Berne, A., Lohmann, U., and Nenes, A.: On the drivers of droplet variability in Alpine mixed-phase clouds, *Atmos. Chem. Phys.*, 21, 10993–11012, <https://doi.org/10.5194/acp-21-10993-2021>, **2021**.

Ramelli, F., Henneberger, J., David, R. O., Bühl, J., Radenz, M., Seifert, P., Wieder, J., Lauber, A., Pasquier, J. T., Engelmann, R., **Mignani, C.**, Hervo, M., and Lohmann, U.: Microphysical investigation of the seeder and feeder region of an Alpine mixed-phase cloud, *Atmos. Chem. Phys.*, 21, 6681–6706, <https://doi.org/10.5194/acp-21-6681-2021>, **2021**.

Miller, A. J.\* , Brennan, K. P.\* , **Mignani, C.**, Wieder, J., David, R. O., and Borduas-Dedekind, N.: Development of the drop Freezing Ice Nuclei Counter (FINC) and use of soluble lignin as an atmospheric ice nucleation standard, *Atmos. Meas. Tech.*, 14, 3131–3151, <https://doi.org/10.5194/amt-14-3131-2021>, **2021**. (\* These authors contributed equally to this work.)

Lauber, A., Henneberger, J., **Mignani, C.**, Ramelli, F., Pasquier, J. T., Wieder, J., Hervo, M., and Lohmann, U.: Continuous secondary ice production initiated by updrafts through the melting layer in mountainous regions, *Atmos. Chem. Phys.*, 21, 3855–3870, <https://doi.org/10.5194/acp-21-3855-2021>, **2021**.

**Mignani, C.**, Wieder, J., Sprenger, M. A., Kanji, Z. A., Henneberger, J., Alewell, C., and Conen, F.: Towards parametrising atmospheric concentrations of ice nucleating particles active at moderate supercooling, *Atmos. Chem. Phys.*, 21, 657–664, <https://doi.org/10.5194/acp-21-657-2021>, **2021**.

Creamean, J. M., **Mignani, C.**, Bukowiecki, N., and Conen, F.: Using freezing spectra characteristics to identify ice-nucleating particle populations during the winter in the Alps, *Atmos. Chem. Phys.*, 19, 8123–8140, <https://doi.org/10.5194/acp-19-8123-2019>, **2019**.

**Mignani, C.**, Creamean, J. M., Zimmermann, L., Alewell, C., and Conen, F.: New type of evidence for secondary ice formation at around  $-15^{\circ}\text{C}$  in mixed-phase clouds, *Atmos. Chem. Phys.*, 19, 877–886, <https://doi.org/10.5194/acp-19-877-2019>, **2019**.

Publication metrics on [Google Scholar](#) and [Publons](#).

## MANUSCRIPTS IN REVIEW:

**Mignani, C.**, Zimmermann, L., Kivi, R., Berne, A., and Conen, F.: Snowfall in Northern Finland derives mostly from ice clouds, *Atmos. Chem. Phys. Discuss.* [preprint], <https://doi.org/10.5194/acp-2022-98>, in review, **2022**.

## CONFERENCE PRESENTATIONS:

Matching crystal habits and radiosonde profiles in Northern Finland. Oral presentation, hold virtually. *European Geosciences Union General Assembly*, **2021** ([Link to the abstract and the display material](#)).

Ice formation in precipitating Arctic clouds as indicated by crystal habits and coinciding radiosonde profiles, Oral presentation, hold virtually. *101<sup>st</sup> American Meteorological Society Annual Meeting*, **2021** ([Link to the abstract and the recorded presentation](#)).

Towards parametrising atmospheric concentrations of ice nucleating particles active at moderate supercooling, Oral presentation, hold virtually. *3<sup>rd</sup> Ice Nucleation Colloquium*, **2020** ([Link to the presentation slides](#), and [the Colloquium website](#)).

Probing secondary ice formation at around  $-15^{\circ}\text{C}$  in mixed-phase clouds, Oral presentation. *European Geosciences Union General Assembly*, Vienna, Austria, **2019** ([Link to the abstract](#)).

Analysis of Arctic Ice-nucleating Particles by Electron Microscopy, Oral presentation. *Nano Imaging User Event 2019*, Basel, Switzerland, **2019** ([Link to the newsletter with the abstract](#)).

Probing secondary ice formation at around  $-15^{\circ}\text{C}$  in mixed phase clouds, Poster presentation. *20<sup>th</sup> Swiss Global Change Day*, Bern, Switzerland, **2019** ([Link to the website](#)).

Examining single snow crystals for ice nucleating particles, Poster presentation. *BACCHUS Final Meeting*, Zurich, Switzerland, **2018** ([Link to the website](#)).

A case study of biological ice-nucleating particles in the Arctic, Oral presentation. *6<sup>th</sup> Workshop on Microphysics of Ice Clouds*, Vienna, Austria, **2018** ([Link to the book of abstracts](#)).

A case study of biological ice-nucleating particles in the Arctic, Poster presentation. *INUIT Final Conference and 2<sup>nd</sup> Atmospheric Ice Nucleation Conference*, Grasellenbach, Germany, **2018** ([Link to the website](#)).

## GRANT:

[Postdoc.Mobility Fellowship](#), Swiss National Science Foundation, 2021  
CHF 110'000.

## TEACHING AND MENTORING EXPERIENCE:

**Co-advisor**, University of Basel, Switzerland 2017 – 2021  
Two MSc and three BSc students.

**Guest Lecturer**, University of Basel, Switzerland 11/2020  
Course: Atmospheric chemistry, climate, and air pollution (58428-01), two hours, virtually.

**Voluntary Lecturer**, Solidaritätsnetz Zurich, Switzerland 12/2014 – 06/2015  
German (A1 level) classes for women, weekly classes.

**Teaching Assistant**, ETH Zürich, Switzerland 09/2010 – 09/2013  
Tutorial in Chemistry I and II (529-2001-02L, 529-2002-02L), weekly classes.

*Updated August 1, 2022*