

Teaching, Supervision and other Educational Activities

1. Supervision of Diploma, Master and Bachelor theses

1997

[1] Kljun, N., 1997: Starkföhnereignis November 1996. Semester thesis ETH [M. Sprenger, C. Schär].

[2] Kljun, N., 1997: Strömungsphänomene im Alpenraum. Diploma thesis ETH [M. Sprenger, C. Schär].

1998

[3] Kind, F., 1998: Massefehler bei Regionalen Numerischen Wettermodellen, verursacht durch die Randbedingungen. Diploma thesis ETH [M. Sprenger, C. Schär].

2002

[4] Croci-Maspoli, M., 2002: Eine neue Methode zur Erkennung von Tropopausenfalten. Diplomarbeit ETH, 56 pp. [M. Sprenger and H. Wernli].

2006

[5] Isotta, F., 2006: Trends der PV-Streamer in der Nordhemisphäre aus ERA-40 Reanalysedaten in der Zeitperiode 1958-2001, unter besonderer Berücksichtigung der Windgeschwindigkeit. Diplomarbeit ETH, 62 pp. [O. Martius, C. Schwierz, M. Sprenger, H. C. Davies].

[6] Siegrist, A., and M. Kunz, 2006: Intercontinental air pollution transport, stratospheric intrusions, and implications for European air quality; A validation of FLEXPART and a comparison with LAGRANTO. Diploma thesis ETH, 79 pp. [J. Cui, M. Sprenger, J. Staehelin]

2007

[7] Schlemmer, L., 2007: Using Potential Vorticity Inversion to understand the mechanisms of Alpine heavy precipitation events. Diploma thesis ETH, 91 pp. [O. Martius, M. Sprenger, H. C. Davies]

[8] Scheiben, D., 2007: Analyse der Häufigkeit von Potential Vorticity Streamern in Bezug auf "El Nino / Southern Oscillation". Semester thesis ETH, 36 pp. [M. Sprenger, O. Martius, H. C. Davies].

[9] Arnold, J., 2007: Rossby Wave Breaking Associated with Cold Surge Episodes over Southeastern Brazil. Bachelor thesis ETH, 60 pp. [M. Sprenger, H. C. Davies].

[10] Madonna, E., 2007: Analyse von Wetterphänomenen mit Hilfe von Satellitenbildern und ECMWF-Analyse. Bachelor thesis ETH, 30 pp. [M. Sprenger, H. C. Davies].

[11] Spörri, M., 2007: Troposphären-Stratosphären Luftmassenaustausch über der Südspitze von Grönland: Eine Klimatologie von 1990 & zwei Fallbeispiele. Semester thesis ETH, 35 pp. [M. Sprenger, H. C. Davies].

2008

[12] Oechslin, R., 2008: Prediction of Foehn in the Alps with Boosting. Bachelor thesis, 26 pp. [M. Sprenger, J. Jenkner, H. C. Davies].

[13] Sonderegger, I., 2008: Dynamics of the Laseier rotor: elementary thoughts and idealised experiments. Diploma thesis ETH, 50 pp. [M. Sprenger, H. C. Davies].

[14] Ceppi, P., 2008: Extreme Value Analysis of Wind Observations over Switzerland. Bachelor thesis ETH, 43 pp. [C. Appenzeller, P. M. Della-Marta, M. Sprenger, H. C. Davies].

[15] Anet, J. G., 2008: Understanding the Role of Potential-Vorticity-Streamers Affecting Rainfall in Northern Switzerland. Bachelor thesis ETH, 33 pp. [M. Sprenger, O. Martius, H. C. Davies].

[16] Böckli, M. and M. Hakuba, 2008: Mountain Wave event and Cross-tropopause exchange over the southern tip of Greenland. Semester thesis ETH, 33 pp. [M. Sprenger, H. C. Davies].

[17] Graf, M., 2008: Synoptical and mesoscale weather situations associated with tornadoes in Europe. Diploma thesis University of Zurich, 113 pp. [M. Sprenger, R. W. Moore, H. C. Davies].

2009

[18] Béguin, A., 2009: Rossby Wave Breaking in the Global Climate Model ECHAM5; The Dynamic Capabilities of a GCM at Different Model Resolutions. Master thesis ETH, 50 pp. [O. Romppainen-Martius, M. Sprenger, P. Spichtinger, D. Folini, H. C. Davies].

[19] Würsch, M., 2009: Lagrangian based analysis of airflow during Föhn in the Alps. Master thesis ETH, 26 pp. [M. Sprenger, J. Jenkner, H. C. Davies].

[20] Massacand, J., 2009: The dynamical link between tropopause level vortices and surface cyclones. Bachelor thesis ETH, 38 pp. [S. Kew, M. Sprenger, H. C. Davies].

[21] Heidemann, M., 2009: Forecast For Weather Balloon Flights. Master thesis ETH, 43 pp. [F. Wienhold, M. Sprenger, H. C. Davies].

[22] Reinert, P., 2009: Bericht zum Programm zur Berechnung der diagnostischen, quasigeostrophischen Vertikalgeschwindigkeit. Semester thesis ETH, 15 pp. [M. Sprenger, H. C. Davies].

[23] Egloff, L., 2009: The Laseyer Rotor – Dynamics & Climatology: A detailed case study using large-eddy simulations and a climatological analysis of local weather station data. Master thesis ETH, 61 pp. [M. Sprenger, J. Schmidli, H. C. Davies, C. Schär].

[24] Seitanidis, P., 2009: Das Aufbrechen des polaren Vortex im Winterhalbjahr 2008/2009. Bachelor thesis ETH, 38 pp. [M. Sprenger, S. Kew, H. C. Davies].

2010

[25] Roch, A., 2010: Orographic flow blocking on the northern side of the Alps: A case study. Bachelor thesis ETH, 41 pp. [M. Sprenger, H. Wernli].

[26] Mayoraz, L., C. Lieber, M. Messmer, N. Ernst, M. Dütsch, D. Büeler, K. Dällenbach, and A. Dittus, 2010: Abschlussbericht zum Systempraktikum – Bericht der Gruppe Meteorologie. 46 pp.

[27] Riday, C., 2010: The Influence of Valley Geometry on the Diurnal Valley Winds. Master thesis ETH, 70 pp. [J. Schmidli, M. Sprenger, H. Wernli, C. Schär].

2011

[28] Bischof, M., 2011: Synthetic Satellite Images from ECMWF. Semester thesis, 45 pp. [F. Aemisegger, H. Sodemann, M. Sprenger, H. Wernli].

[29] Trokay, Y., 2011: Foehn wind generating waves on Lake Zurich. Master thesis ETH, 64 pp. [M. Graf, M. Sprenger, H. Wernli, U. Lohmann]

[30] Roch, A., 2011: Orographic Blocking in the Alps: A Climatologic Lagrangian Study. Master thesis ETH, 46 pp. [M. Sprenger, E. Madonna, H. Wernli].

[31] Kroener, N., 2011: Accuracy of trajectory calculation: Dependence on the temporal resolution of the input files. Master thesis ETH, 59 pp. [M. Sprenger, H. Sodemann, H. Wernli]

[32] Leutwyler, D., 2011: Heavy precipitation induced by an upper-level atmospheric precursor in Europe and in the ECHAM climate model. Master thesis ETH, 56 pp. [O. Martius, D. Folini, M. Sprenger, H. Wernli].

[33] Schmitt, S., 2011: Warm Conveyor Belts in Satellitendaten. Semester thesis ETH, 55 pp. [E. Madonna, M. Sprenger, H. Wernli].

[34] Keller, M., 2011: Quasi-geostrophic dynamics based on PV inversion. Master thesis University of Zurich, 34 pp. [V. Schroeder, H. Wernli, M. Sprenger, S. Pfahl, H. Wernli].

2012

[35] Bieli, M., 2012: The D-Day Landings on June 1944: Meteorology between the Fronts. Analyzing Weather Forecasts from the 20th Century Reanalysis. Semester thesis ETH, 39 pp. [M. Sprenger, N. Piaget, C. Welker, H. Wernli].

[36] Ververs, L., 2012: Weather patterns for sailing in Weymouth Bay & Portland Harbour: Analysis for the 2012 Olympic Games. Master thesis ETH, 84 pp. [J. Schmidli, M. Sprenger, N. Kljun, H. Wernli, C. Schär]

[37] Lentink, H. S., 2012: Extreme foehn in Switzerland: a climatology and the relation to large scale flow. Master thesis University of Utrecht, 65 pp. [M. R. van den Broeke, A. J. van Delden, M. Sprenger, J. Schmidli, P. Hächler, H. Wernli].

[38] Mayoraz, L., 2012: Clear Air Turbulence over Europe: Climatology, Dynamics and Representation in COSMO-7. Master thesis ETH, 69 pp. [M. Sprenger, V. Stauch, H. Wernli].

[39] Wilhelm, M., 2012: COSMO-2 Model Performance in Forecasting Foehn: a Systematic Process-oriented Verification. Master thesis ETH, 58 pp. [M. Buzzi, M. Sprenger, H. Wernli].

2013

[40] Cervenka, D., 2013: Qualitative and quantitative analysis of cyclogenesis with satellite imagery and ECMWF data. Master thesis ETH, 74 pp. [M. Sprenger, M. Graf, H. Wernli].

[41] Ackermann, J., 2013: Der Einfluss von Tropopausenfalten auf bodennahe meteorologische Felder. Bachelor thesis ETH, 30 pp. [M. Sprenger, H. Wernli].

[42] Mamali, D., 2013: Lagrangian and Eulerian Analysis of Clear Air Turbulence over the United States. Master thesis ETH, 52 pp. [M. Sprenger, H. Wernli].

[43] Meyer, D., 2013: Synoptic and Mesoscale Influence on Foehn in Altdorf. Bachelor thesis ETH, 32 pp. [M. Sprenger, N. Piaget, H. Wernli].

[44] Binder, F., 2013: Towards operational Clear Air Turbulence Diagnostics with COSMO-7 Forecasts. Master thesis ETH, 46 pp. [M. Sprenger, J. Schmidli, J. Ambühl, H. Wernli, C. Schär].

2014

[45] Bitschnau, D., 2014: Development and implementation of an aircraft based measurement system for investigating Foehn; Comparison between in situ measurements and COSMO-2 simulations. Master thesis ETH, 71. pp [H. Wernli, M. Sprenger, H. Sodemann, H. Wernli].

[46] Reynolds, S., 2014: Flow properties of foehn and the role of turbulence and microphysics in foehn air warming: An online trajectory study. Master thesis ETH, 68 pp. [A. Miltenberger, M. Sprenger, H. Wernli].

2015

[47] Bussmann, M., 2015: Climatology of Shallow Foehn in Altdorf, Switzerland. Bachelor thesis ETH, 18 pp. [M. Sprenger, H. Wernli].

[48] Cetti, C., 2015: Climatology of Alpine north foehn. Master thesis ETH, 75 pp. [M. Buzzi, M. Sprenger, H. Wernli].

2016

[49] Mosimann, L., 2016: Towards online cloud tracking with the COSMO-Model. Master thesis ETH, 58 pp. [S. Rüdisühli, N. Piaget, M. Sprenger, H. Wernli].

[50] Fischer, L., 2016: Objective classification of cyclones during their largest deepening phase. Master thesis University of Zurich [M. Sprenger, D. Büeler, H. Wernli].

2017

[51] Beusch, L., 2017: Towards moisture sources analysis using online trajectories in convection-resolving simulations. Master thesis ETH, 62 pp. [N. Piaget, S. Rüdisühli, M. Sprenger, H. Wernli].

[52] Schöpfer, S., 2017: Time Lapse Movies of Meteorological Phenomena. Master thesis ETH, 76 pp. [M. Keller, M. Sprenger, C. Schär].

[53] Jansing, L., 2017: Extremer Massentransport durch die Tropopause. Bachelor thesis ETH, 66 pp. [M. Sprenger, H. Wernli].

2018

[54] Bürgi, C., 2018: The Mistral: Development and Evolution Based on Case Studies and a Climatology. Bachelor thesis ETH, 32 pp. [S. Rüdüsühli, M. Sprenger, H. Wernli]

[55] Krieger, N., 2018: Westföhn am Vierwaldstättersee. Bachelor thesis ETH, 73 pp. [M. Sprenger, E. Müller, H. Wernli]

[56] Bonafini, R., 2018: Overshooting clouds in the lowermost stratosphere. Bachelor thesis ETH, 33 pp. [R. Portmann, A. Oertel, M. Sprenger, H. Wernli]

[57] Chun, J., 2018: Moisture Fronts Linked to Precipitation over Europe – Case studies and a Climatology. Bachelor thesis ETH, 36 pp [M. Sprenger, A. De Vries, H. Wernli].

2019

[58] Schmid, T., 2019: Extratropical Cyclone Intensification in Response to Different Forcings. Bachelor thesis ETH, 54 pp. [M. Sprenger, L. Fischer, H. Wernli]

[59] Maurer, A., 2019: Precipitation on the South American Altiplano. Master thesis ETH, 50 pp. [K. Sedlmeier, M. Sprenger, C. Schwierz, D. Domeisen]

[60] Bader, R., 2019: Extraction and Visual Analysis of Potential Vorticity Banners around the Alps. Master thesis ETH, 10 pp. [T. Günther, M. Sprenger, N. Ban, S. Rüdüsühli, Ch. Schär].

[61] Greter, L., 2019: Anomalies in Flow Features before and after Sudden Stratospheric Warmings. Bachelor thesis ETH, 56 pp. [D. Domeisen, M. Sprenger, B. J. Esteve]

2020

[62] de Vries, I. E., 2020: Extreme precipitation events in the Middle East: Representation of synoptic circulation features in early and late 20th century reanalysis data. Master thesis Stockholm University, 46 pp. [A. de Vries, M. Sprenger, H. Wernli].

[63] Scherrer, S., 2020: Aircraft Icing - A serious Threat for Aviation. Master thesis ETH, 81 pp. [M. Sprenger, U. Lohmann, P. Falke, T. Jordi].

[64] Besson, P., 2020: Intensification and Propagation of Extratropical Cyclones. Master thesis ETH, 87 pp. [M. Sprenger, L. Fischer, S. Schemm, H. Wernli].

[65] Näf, L., 2020: The influence of mountain ranges on warm conveyor belts - Case studies and climatologies. Master thesis ETH, 111 pp. [M. Sprenger, M. Böttcher, H. Joos, H. Wernli].

[66] Wigger, L., 2020: Visualization of Thermally-driven Flow over the Alpine region. Semester thesis ETH, 35 pp. [T. Günther, M. Gross, M. Sprenger, L. Jansing, H. Wernli].

[67] Girlanda, O., 2020: Stratospheric Air Intrusions and their Impact on the Ozone Concentration of the Tropical Troposphere over Hilo, Hawaii. Bachelor thesis ETH, 48 pp. [H. Binder, M. Sprenger, H. Wernli].

[68] Boduryan, R., 2020: Spatial and Temporal Analysis of Warm Conveyor Belts and their Impact on Atmospheric Air Flows. Master thesis ETH, 74 pp. [T. Günther, M. Gross, M. Böttcher, H. Joos, M. Sprenger, H. Wernli].

[69] Lanz, T., 2020: Lagrangian Analysis of Thunderstorms in Switzerland. Master thesis University of Bern, 83 pp. [O. Martius, T. Raupach, Y. Barton, M. Sprenger].

[70] Bösigler, L., 2020: Visual Transport Analysis of Atmospheric Air Flows at the Tropopause. Bachelor thesis ETH, 70 pp. [T. Günther, M. Sprenger, M. Böttcher, H. Joos, M. Gross].

[71] Wurz, K., 2020: Two Case Studies of the Regional Hotspot of Stratosphere Troposphere Exchange over The Andes. Bachelor thesis ETH, 28 pp. [M. Sprenger, H. Wernli].

[72] Mony, C., 2020: Evaluating foehn development in a changing climate using machine learning and investigating the impact of foehn on forest fire occurrence and severity, Master thesis ETH & University Tübingen, 128 pp. [M. Sprenger, L. Jansing, J. Jochum, H. Wernli].

[73] Blaga, C., R. Chan and L. Fluri, 2020: Cyclone Track Forecasting. Data Science Report, 17 pp. [S. Schemm, M. Sprenger].

2021

[74] Nebel, D., 2021: Statistical Modeling of Foehn Intensity for Altdorf, Switzerland. Bachelor thesis ETH, 29 pp. [M. Sprenger, L. Jansing, H. Wernli].

[75] Kehl, M., 2021: Embedded Convection in Warm Conveyor Belts - A Climatology based on polar-orbiting satellite retrievals and warm conveyor belt trajectories. Master thesis ETH, 95 pp. [K. Heitmann, A. Oertel, M. Sprenger, H. Binder, H. Wernli].

[76] Zanetta, F., 2021: Nowcasting of surface wind speed using probabilistic, explainable Deep Learning. Master Thesis ETH, 94 pp. [D. Nerini, M. Sprenger, H. Wernli].

[77] Schöni, F., 2021: Assessing the error of 2m temperature forecasts by the ECMWF and its relationship with atmospheric flow features in the Northern Hemisphere. Bachelor Thesis ETH, 42 pp. [H. Wernli, M. Sprenger].

[78] Zukanovic, D., 2021: Temperature Forecast Errors and their Causes During the July 2019 Heat Wave in Europe. Bachelor Thesis ETH, 52 pp. [H. Wernli, M. Sprenger].

[79] Lerzer, N., 2021: Zeitlich koherente Extraktion von Jetstreams. Bachelor Thesis Friedrich-Alexander-Universität Erlangen-Nürnberg, 29 pp. [T. Günther, M. Sprenger, M. Böttcher, H. Joos].

[80] Lezuo, T., 2021: Foehn and sea breezes in the Jordan Valley - Eulerian and Lagrangian Perspectives of two contrasting case studies. Bachelor Thesis ETH, 30 pp. [L. Jansing, M. Sprenger, H. Wernli].

[81] Oberhauser, L., 2021: Transport Analysis in Thermally-Driven Air Flow. Bachelor Thesis Friedrich-Alexander-Universität Erlangen-Nürnberg, 37 pp. [T. Günther, M. Sprenger, L. Jansing].

2022

[82] Lee, M. H. F., 2022: Rossby Wave Breaking in Present and End-of-Century Climate. Master Thesis ETH, 83 pp., [M. Sprenger, R. Portmann]

[83] Caratsch, A., 2022: Spatio-temporal Evolution and Intensification of Arctic Cyclones. Master Thesis ETH, 85 pp., [K. Hartmuth, M. Sprenger, L. Papritz].

[84] Mürsepp, T., 2022: Warm Conveyor Belts in the Extratropics: What Determines Their Intensity? Master Thesis ETH, 47 pp. [K. Heitmann, M. Sprenger]

[85] Ruepp, J., 2022: An event-based categorization and characterization of Alpine foehn. Semester Thesis ETH, 39 pp. [L. Jansing, M. Sprenger]

[86] Delbeke, J., 2022: Foehn Prediction and Classification on a Climatological Timescale Using Self-Organizing Maps. Bachelor Thesis ETH, 28 pp. [M. Sprenger, L. Jansing].

[87] Qin, Y., F. Lu, and T. Xu, 2022: Data Science Lab Report - Cyclone Intensity Prediction. 12 pp. [S. Schemm, M. Sprenger]

2023

[88] Stahl, F., 2023: Warm Conveyor Belts in Antarctica. Master Thesis ETH. 76 pp. [M. Sprenger, H. Joos, T. Mürsepp, V. Selvakumar].

[89] Jonsdottir, L., 2023: Large-Eddy Simulations of Foehn in the Rhine Valley. Master Thesis ETH, 84 pp. [N. Krieger, M. Sprenger].

[90] Cheda, A., 2023: Interactions between valley wind and katabatic flow in the Fieschertal region. Bachelor Thesis ETH, 48 pp. [J. Anet, M. Sprenger, M. Sprenger]

[91] Achoumi, S., 2023: Das Gewitterüberwachungssystem des Kantons Wallis. Bachelor Thesis ETH, 61 pp. [H. Wernli, M. Sprenger]

[92] Zimmermann, T., 2023: Assessing the relevance of orographic lifting, thermal updrafts and gravity waves for bird flight over complex terrain. Bachelor Thesis ETH, 44 pp. [L. Jansing, M. Sprenger, M. Scacco].

[93] Keiser, J., 2023: Clear Air Turbulence in Future Climate. Bachelor Thesis ETH, 37 pp. [M. Sprenger, F. Lee].

[94] Schwizer, L., 2023: Lagrangian Perspective of Clear Air Turbulence. Bachelor Thesis ETH, 49 pp. [F. Lee, M. Sprenger].

[95] Holdinghausen, J., 2023: Visualizing the Temporal Evolution of the Tropopause. Bachelor Thesis Friedrich-Alexander-Universität Erlangen-Nürnberg, 41 pp. [T. Günther, M. Sprenger].

[96] Frick, K., 2023: Dynamically-forced flow in deep and narrow valleys. Master Thesis ETH, 76 pp. [N. Krieger, M. Sprenger].

2024

[97] Merschhemke, Th., 2024: Strömungsaufspaltung im Sarganserland – Klimatologie und Fallstudien -- Vergleich von langjährigen Stationsmessdaten sowie Modellanalysedaten. Bachelor Thesis ETH, 26 pp. [M. Sprenger, D. Gerstgrasser].

[98] Artho, V., 2024: Predicting the Flight Path of Sounding Balloons. Bachelor Thesis ETH, 45 pp., [Y. Poltera, F. Wienhold, M. Sprenger].

[99] Weber, M., 2024: Investigating Synoptic Conditions Leading to CAT Over the Swiss Alps -- A Case Study. Bachelor Thesis ETH, 46 pp. [F. Lee, M. Sprenger].

[100] Le May, S., 2024: A synoptic perspective on Northern Hemisphere available potential energy collapses. Master Thesis ETH, 54 pp., [M. Federer, M. Sprenger, L. Papritz].

[101] Yeung, K. L., 2024: Moisture Sources and Vorticity Structure of Hailstorms over Switzerland in a kilometer-scale convection-permitting model. Master Thesis ETH, 76 pp., [K. Brennan, M. Sprenger].

[102] Zita, D., 2024: Linking Environmental Patterns to Cyclone Deepening Rates: Insights from Self-Organising Maps Analysis. Master Thesis ETH, 89 pp. [T. Mürsepp, M. Sprenger].

[103] von Mering, C., 2024: Rossby Waves in a Barotropic Vorticity Model -Influence of the jet stream on wave propagation. Master Thesis ETH, 50 pp. [V. Selvakumar, M. Sprenger].

2. Co-Supervision of PhD theses

[1] Kew, S., 2007: Structure and Dynamics of Distinctive Flow Anomalies in the Lowermost Stratosphere. Diss ETH 17231, 137 pp. [H.C. Davies, C. A. Davis, M. A. Sprenger].

[2] Cui, J., 2008: Lagrangian Analysis of Ozone Trends at Selected Receptor Sites in the Northern Hemisphere. Diss ETH 18052, 107 pp. [J. Staehelin, A. Stohl, M. Sprenger, T. Peter].

[3] Skerlak, B., 2014: Climatology and process studies of tropopause folds, cross-tropopause exchange, and transport into the boundary layer. Diss ETH 22036, 178 pp. [H. Wernli, M. Sprenger, P. Hoor].

[4] Graf, M., 2014: Objektive Klassifikation von Zyklongenese in den Aussertropen. Diss ETH 21759, 145 pp. [H. Wernli, M. Sprenger, C. Raible].

[5] Rüdüsühli, S., 2018: Attribution of rain to cyclones and fronts over Europe in a kilometer-scale regional climate simulation, Diss ETH 25536, 221 pp. [H. Wernli, M. Sprenger, O. Martius].

[6] Oertel, A., 2019: Embedded convection in warm conveyor belts, Diss ETH 26554, 224 pp. [H. Wernli, H. Joos, M. Sprenger, B. Harvey].

[7] Portmann, R., 2020: The life cycle of potential vorticity cutoffs - climatology, predictability, and high impact weather. Diss ETH 27081, 214 pp. [H. Wernli, M. Sprenger, A. Fink].

[8] Enz, B., 2022: The Dynamical Tropopause Location as a Predictor for North Atlantic Tropical Cyclone Activity. Diss ETH XXXX, 110 pp. [U. Lohmann, M. Sprenger, S. Jones]

[9] Jansing, J., 2023: A Lagrangian perspective on the Alpine Foehn. Diss ETH XXXX, 261 pp. [M. Sprenger, L. Papritz, H. Wernli, A. Gohm]

[10] Heitmann, K., 2023: Characteristics and Impacts of Warm Conveyor Belts in Present-Day and Future Climate. Diss ETH 29268, 154 pp. [H. Wernli, H. Joos, M. Sprenger, J. Catto]

3. Co-Supervision of Academic Guests

[1] Alexandre Ramos [PhD student]; University of Lisbon, Portugal; 1 February – 1 May 2010; research on a Lagrangian weather type classification.

[2] Davide Putero [PhD student]; Institute of Atmospheric Sciences and Climate (CNR-ISAC), Italy; 1 March – 1 June 2015; research on stratospheric intrusions and ozone trends.

[3] Juan Jesus Aleman [Postdoc]: University of Castilla-La Mancha, Spain; 13 August – 24 October 2018; research on classification of Mediterranean cyclones (medicanes vs. extratropical cyclones), based on the objective methodology of Graf et al. (2015).

[4] Natalia Machado Crespo [PhD student]; University of Sao Paulo, Brazil; 10 September 2018 – 1 March 2019; research on cyclogenesis over South America – driving mechanisms, comparison between different cyclogenesis regions.

[5] Mahsa Damanafshan [PhD student]; University of Tehran, Iran; 15 April – 15 October 2019; research on ozone distribution (case studies and climatology) based on the CAMS (Copernicus Atmosphere Monitoring Service) reanalysis of ECMWF.

[6] Chenhui Jiin [PhD student]; Monash University, Australia; 22 April – 1 May 2024; collaboration on weather systems and extreme events in Australia (droughts, heavy precipitation).

[7] Juan Jesus Gonzales Aleman [R&D AEMET]; Spain Met Service; 29 April – 8 May 2024; collaboration on Lagrangian and Eulerian characterization of cyclones, medicanes, tropical cyclones,...

[8] Areti-Panagiota Bantouna, 2024 [Student Exchange from Greece]: Wave simulations in shallow desert lakes. Scientific Report, 60 pp.

4. (External) Supervisor for Practicals and Postdiploma Studies

[1] Egloff, L., 2010: Laseyer Rotor - Dynamics and Climatology follow-up studies, 54 pp.

[2] Suter, P., 2017/18: Meteonews AG, Siewerdstrasse 105, Zürich, Schweiz.

[3] Krieger, N., 2019: MeteoSchweiz, Operation Center 1 / Zürich-Flughafen, Zürich, Schweiz.

[4] Krieger, N., 2019/20: Master Scholarship Programme during autumn and spring semester 2019/20; development of a diagnostic tool to study CAT (clear air turbulence).

[5] Zanetta, F., 2020: Developing seamless nowcasting tools in the INCA-CH system. MeteoSchweiz, Operation Center 1 / Zürich Flughafen, Schweiz.

[6] Besson, P., 2021: Postdiploma follow-up study and paper writing on dry-dynamic forcing factors for extratropical cyclones. [Supervision together with S. Schemm].

[7] Rieder, J., 2021: Implementation of IFS forecast visualization for IAC (replacement of IDL-based scripts by Python-based ones).

[8] Caratsch, A., 2022: Evaluation of the new Laseyer warning system developed in the joint Innosuisse project together with Appenzeller Bahnen and MeteoSwiss; documentation of the new warning algorithm; comparison of station measurements between St. Gallen and Trogen. Postdiploma 1.5 month. [Supervision together with I. Mahlstein, MeteoSwiss].

[9] Carrard, T., 2023/24: Case study and climatological analysis of GPS-tracked Golden Eagle data, in particular assessing if and how Golden Eagles make use of gravity-wave updrafts [Supervision together with Martina Scacco, MPI Animal Behaviour]

[10] Frick, K., 2024: Baudirektion des Kanton Zürich, Weinbergstrasse 16, Zürich, Schweiz.

5. Further educational activities

[1] Organisation of a '**Media and Climate Communication Workshop**' with Beat Glogger from scitec-media, Zurich, 14 September 2017. The workshop was jointly organized by the Swiss Meteorological Society (SGM) and the Center for Climate System Modeling (C2SM). 27 participants.

[2] Co-organisation of **A2P** events, i.e., visits at private firms that employ atmospheric scientists. These events are organized by the Swiss Meteorological Society, and are addressed in particular Master students and PhD students. Typically, 10-20 persons take part. So far, visits have been at inNet Umwelmonitoring (2013), Meteonews (2014), Alpiq (2014), SwissRe (2015), Meteogroup (2016), BAFU (2017), and INFRAS (2018), AXPO (2019).

[3] At the **Annual Meeting of the Swiss Meteorological Society** Master students from Switzerland are invited to discuss their Master topic with participants of the meeting. Typically, 10-20 Master students take part at these informal table discussions.

[4] Workshop on **Aviation Meteorology**, together with MeteoSwiss (Andreas Asch) and ZHAW (Julien Anet), Winterthur (ZHAW), 27 May 2019, 75 participants.

[5] Fachredaktor zum **Themenheft "Aussertropische Zyklonen"** in *Promet - Meteorologische Fortbildung* (Heft 103, 2020). Das Themenheft umfasst zehn Beiträge, welche folgende Aspekte aussertropischer Zyklonen behandeln: Vorhersage, Clustering, Vermessung, Zyklonen und Fronten, Geschichte der Zyklonenforschung, Struktur und Erscheinungsformen (PV-Struktur, WCBs, Umwandlung von tropischen in aussertropische Zyklonen), Zyklonen in einem Paläoklima und in einem zukünftigen Klima.

[6] Fachliche und methodische Unterstützung während dem Systempraktikum 2020/21 zum Laseyer-Windsturm im Schwendetal, Appenzell. Das Praktikum wurde von Ulrich Krieger und Maxi Böttcher geleitet, zusätzliche Wind-Messsysteme wurden ihm Tal und auf einem Zug der Appenzeller Bahnen installiert und von den Studenten ausgewertet.

[7] Forecaster Education Meteoswiss, The Laseyer windstorm - case studies, climatologies and mechanisms. 13 and 30 September 2022, about 40 participants at each event.

[8] Visit of students from Goethe Universität Frankfurt; co-organizing the visit with J. Schmidli, L.Jansing and N. Krieger.