

Otávio Medeiros Feitosa

PHD STUDENT · INPE METEOROLOGY PROGRAM

National Institute for Space Research (INPE), Cachoeira Paulista - SP, Brasil

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Education

National Institute for Space Research

Cachoeira Paulista - SP

PHD METEOROLOGY

2024 - present

- Working on the development of S2S prediction models using spherical convolutional NN.
- Advisor: Dr. Saulo R. Freitas /Dr. Haroldo Fraga de Campos Velho

Cachoeira Paulista - SP

MS IN METEOROLOGY

2022 - 2024

- Machine Learning, Nowcasting
- Advisor: Dr. Saulo R. Freitas; Dr. Haroldo Fraga de Campos Velho

Federal University of Pelotas

Pelotas-RS

BS UNDERGRADUATE DEGREE

2017 - 2022

- Data assimilation, Machine Learning, Numerical Modeling
- Undergrad research advisor: Dr. Fabricio P. Härter; Dr. Leonardo Calvetti

Professional Experience

2023 **Researcher in Atmospheric Modeling**, CEMPA

2021-2023 **Mid-Level Data Scientist**, Semantix

Publications

PUBLISHED

Feitosa, O. M., Freitas, S. R., Velho, H. F. C., Chovert, A. D. 2023. Data Fusion Approach for Precipitation Nowcasting with ConvLSTM. In: AMS Annual Meeting, 2023, Baltimore. Annals of the AMS Annual Meeting, 2023.

Feitosa, O. M., Calvetti, L., Härter, F. P., Machado, G. C., Toshio, R., Maske, B. B., Beneti, C. 2017. The Impact of Radar Data Assimilation for Simulating a Supercell in Southern Brazil. In: 38th Conference on Radar Meteorology, 2017, Chicago. Proceedings of the 38th Conference on Radar Meteorology, 2017.

Feitosa, O. M., Calvetti, L., Härter, F. P., Toshio, R., Maske, B. B. 2017. Comparison of Assimilation Methods for Simulating a Supercell in Southern Brazil. In: Seventh International WMO Symposium on Data Assimilation, 2017, Florianópolis. Proceedings of the Seventh International WMO Symposium on Data Assimilation, 2017.

Feitosa, O. M., Santos, V. L., Mello, L., Rabelo, B. L., Freitas, S. R., Velho, H. F. C. 2022. Neural Model for Probabilistic Precipitation Forecast. In: XXI Meeting of Meteorology Graduate Students, 2022, Cachoeira Paulista. Proceedings of the XXI Meeting of Meteorology Graduate Students, 2022.

Feitosa, O. M., Calvetti, L., Härter, F. P., Mello, L., Santos, V. L., Marten, L. D. 2022. Metamodeling Using GOES-R Satellite Data for Short-Term Forecasting of Precipitation Through ConvLSTM Model. In: 11th European Conference on Radar in Meteorology and Hydrology, 2022, Lugano. Book of Abstracts 2022, 2022.

Feitosa, O. M., Ramos, E. C. P., Silva, T. R. M. E., Gonçalves, L. J., Harter, F. P. 2020. Impact of Data Assimilation in a Case of Explosive Cyclogenesis. In: X ERMAC, 2020. Impact of Data Assimilation in a Case of Explosive Cyclogenesis, 2020.

Feitosa, O. M., Mello, L., Marten, L. D., Santos, V. L., Simoes, D., Calvetti, L., Harter, F. P., Vianna, J. C. T. 2019. Weather Radar Simulator Using Convolutional Networks. In: II CAB - Brazilian Aerospace Congress, 2019, Santa Maria (RS). Proceedings of the II CAB - Brazilian Aerospace Congress, 2019.

Feitosa, O. M., Calvetti, L., Harter, F. P. 2017. Indirect Assimilation of Radar Reflectivity with WRF 3DVAR and its Impact on Short-Term Forecasting. In: VII South Brazilian Meeting of Meteorology, 2017, Pelotas-RS. Proceedings of the VII ESBMET: Meteorology, Science and Innovation, 2017.

- Feitosa, O. M.**, Ramos, E. C. P., Silva, T. R. M., Gonçalves, L. J., Harter, F. P. 2021. Initialization Process of the WRF Model in a Case of Explosive Cyclogenesis. *Revista Mundi Engenharia, Tecnologia e Gestão*, 6: 361-01-362-16.
- Feitosa, O. M.**, Härter, F. P., Calvetti, L. 2020. Evaluation of the En4DVar Data Assimilation Method Implemented in the WRF Model. *Anuário do Instituto de Geociências - UFRJ*, 43: 405-414.
- Ribeiro, G. L. M.**, Harter, F. P., Quadros, R. S., Buske, D., Feitosa, O. M. 2018. WRF Model Initialization Applied to a Case of Explosive Cyclogenesis in the Southern Region of Brazil. *American Journal of Environmental Engineering*, 8: 88-98.
- Feitosa, O. M.**, Freitas, S. R., Velho, H. F. C., Chovert, A. D., Oliveira Junior, C. M. L. 2024. SphereDA: Convolutional Spherical Neural Network for Global Data Assimilation. In: *Data Assimilation Machine Learning, ISDA2024*.

Presentations

- Feitosa, O. M.**, Ramos, E. C. P., Silva, T. R. M., Gonçalves, L. J., Harter, F. P. 2020. Impact of Data Assimilation in a Case of Explosive Cyclogenesis. **Oral presentation:** X ERMAC, Pelotas, RS.
- Feitosa, O. M.**, Mello, L., Marten, L. D., Santos, V. L., Simoes, D., Calvetti, L., Harter, F. P., Vianna, J. C. T. 2019. Weather Radar Simulator Using Convolutional Networks. **Poster presentation:** II CAB - Brazilian Aerospace Congress, Santa Maria, RS.
- Feitosa, O. M.**, Calvetti, L., Harter, F. P. 2017. Indirect Assimilation of Radar Reflectivity with WRF 3DVAR and its Impact on Short-Term Forecasting. **Porter presentation:** VII South Brazilian Meeting of Meteorology, Pelotas, RS.
- Feitosa, O. M.**, Santos, V. L., Mello, L., Rabelo, B. L., Freitas, S. R., Velho, H. F. C. 2022. Neural Model for Probabilistic Precipitation Forecast. **Oral presentation:** XXI Meeting of Meteorology Graduate Students, Cachoeira Paulista, SP.
- Feitosa, O. M.**, Freitas, S. R., Velho, H. F. C., Chovert, A. D. 2023. Data Fusion Approach for Precipitation Nowcasting with ConvLSTM. **Oral presentation:** AMS Annual Meeting, Baltimore, MD.
- Feitosa, O. M.**, Calvetti, L., Härter, F. P., Machado, G. C., Toshio, R., Maske, B. B., Beneti, C. 2017. The Impact of Radar Data Assimilation for Simulating a Supercell in Southern Brazil. **Poster presentation:** 38th Conference on Radar Meteorology, Chicago, IL.
- Feitosa, O. M.**, Calvetti, L., Härter, F. P., Toshio, R., Maske, B. B. 2017. Comparison of Assimilation Methods for Simulating a Supercell in Southern Brazil. **Porter presentation:** Seventh International WMO Symposium on Data Assimilation, Florianópolis, SC.