

# Optimizing Neural Networks for CO<sub>2</sub> Vertical Profile Retrieval

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## Objectives

- Develop a Baseline Global NN Model for CO<sub>2</sub> Predictions
- Enhance the Performance of the AirCore Balloon Data Model using a fine-tuning/hybrid methodology

## Results

- Enhanced Data Quality: Preprocessing led to a stronger correlation between input and output.
- Baseline Global Model Improvement: RMSE reduced from 0.9% to 0.3%.
- AirCore Fine-Tuning Model Improvement: RMSE reduced from 3.7% to 1.7%.

