1. Abstract
2. Introduction
   1. Why it’s useful
      1. Predicting wind/temperature/field – Outline problem – Half a page, 10-15 references. Dave Whiteman has review papers
      2. Larry Mahrt 2017, Lemone’s 2003 paper, cited in presentations
   2. Previous work
      1. Neural network previous work
         1. Gertjan’s paper
         2. Florian’s paper
         3. Others?
      2. Other methods used to do this (Interpolation?)
      3. Sensitivity analysis in neural networks
      4. Nowcasting in complex terrain
   3. Neural network review
      1. What is neural network and how they work
      2. How neural networks have been used in meteorology
3. Methods
   1. Neural network implementation details
   2. KASCADE details
      1. Discussion of LEMSv2
      2. Table of instrument locations
      3. Map of locations – Use google or IGN maps, topo + satellite, Corine Land Use, Local slope and aspect of each site (Ask Thierry)
4. Results and Discussion – Highlight all sub-steps can be done with temperature, wind speed/direction, or specific humidity
   1. Cross-Validation with hidden nodes – temperature
   2. Location sensitivity analysis with connection weights method – temperature
      1. 12 plots or tables. Look for location dependency
   3. Using results from location sensitivity analysis, do number of stations sensitivity
      1. Add variables in increasing, decreasing, and random importance
   4. Low/High Wind Focus - In general, follow format: 1 figure, 6 panels, 3 panels for Jan 17, 3 panels for Jan 27. See slides 34-39 on presentation. Do it for:
      1. Wind Velocity Components
      2. Virtual Temperature
      3. Specific Humidity (Search for “Virtual Potential Temp” in mail for formulas)
      4. In general, highlight ability of neural network to generalize to other variables. Use optimal values as found above
   5. Other hyperparameter
      1. One output vs. Multiple output
      2. Percentage of training vs. Validation
      3. In general, highlight this is somewhat separate from above points
5. Future work
   1. Other field experiments
   2. Hyperparameter optimization
   3. Deep Learning
6. Conclusion