The Leaf Area Index (LAI) and Fraction of Absorbed Photosynthetically Active Radiation (FAPAR) Climate Data Record (CDR) is a long term data set derived from the Advanced Very High Resolution Radiometer (AVHRR) sensors onboard the NOAA 7, 9, 11, 14, 16, and 18 platforms. The data set code name is AVH15 and is hosted at NOAA NCDC. The data set relies on the 30-year data set of Surface Reflectance (SR) CDR (AVH09). The algorithm is based on a per-class neural network trained using AVHRR SR and MODIS LAI/FAPAR. We used the BELMANIP-2 sites network to calibrate the ANN and the DIRECT in situ measurement to assess the uncertainty of the retrievals.

ANN Calibration

CDR Validation

Fig.: Conceptual representation of the Artificial Neuron Network, including normalization steps.

In situ validation using the DIRECT network

Table: Validation Scores based on the DIRECT in situ measurement network

http://www.ncdc.noaa.gov/cdr/operationalcdrs.html