**Atmospheric
Measurement
Techniques
Discussions**

Interactive comment on "Development of a neural network model for cloud fraction detection using NASA-Aura OMI VIS radiance measurements" *by* G. Saponaro et al.

Anonymous Referee #4

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General comments The paper describes the development of neural network algorithms for cloud detection using NASA-Aura OMI measurements. The results obtained by training neural networks with OMI and MODIS data are presented and discussed. The results of OMI level 1b radiance measurements are compared with MODIS cloud fraction. Exact cloud retrieval is an important task to determine the composition of lower atmosphere and surface characteristics. The described cloud detection system which is based on neural networks to develop an automated cloud clearing algorithm is well adapted to the fact that cloud properties are highly variable and difficult to detect. An optimal learning algorithm for the cloud screening task is selected. The described novel methodology for the direct retrieval of the cloudy or cloud-free pixels from VIS measure-

ments by OMI contributes to the preparation of new satellite missions. The possibilities for the TROPOMI instrument to be launched in 2015 are discussed. Advantages and disadvantages of the method are discussed. The paper addresses relevant scientific questions within the scope of AMT. The paper presents novel concepts, ideas and tools. The scientific methods and assumptions are valid and clearly outlined so that substantial conclusions are reached. The description of experiments and calculations are sufficiently complete and precise to allow their reproduction by fellow scientists. The quality and information of the figures are very well. The related work is well cited as well as the number and quality of references appropriate i.e. the authors give proper credit to related work and clearly indicate their own new/original contribution. The title clearly reflects the contents of the paper and the abstract provides a concise and complete summary. The overall presentation is well structured and clear. The language is fluent and precise. The mathematical formulae, symbols, abbreviations, and units are correctly defined and used. Specific Comments No Technical corrections no