

## ***Interactive comment on “Retrieval of atmospheric optical parameters from ground-based sun-photometer measurements for Zanjan, Iran” by A. Bayat et al.***

**Anonymous Referee #2**

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The work presented is very interesting. A well known method is used to determine atmospheric parameters in an area not covered by the instruments of AERONET. There is some important information though missing that is needed to support the conclusions.

1) The measured and computed results should be accompanied by a measurement error. This will enable the authors to quantify their conclusions (significant or not). Specifically the Angstrom parameters are very sensitive to AOD measurement errors and therefore quantitative conclusions on particle size distribution should be drawn with

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care.

2) Information on cloud screening method and number of cloud-free days used per month is needed. During months with much rain (and thus clouds), cloud-free days may usually occur directly after rain. This may lead to underestimation of monthly mean AOD and thus influence conclusions.

Some minor comments: 3) The optical thickness due to ozone absorption (Chappuis-band) at the 670 nm channel is approximately 0.01 at 300 Dobson Units. This should be accounted for.

4) Some more information about what is called "a dust event" would be welcome (duration, intensity etc.). Are higher values of AOD in dust-event period only due to dust events or is the background value of AOD also higher at that time?

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