

RC1: 'Comment on egosphere-2023-139', Anonymous Referee #1, 12 Apr 2023 reply - #2

What's new in the SORACES instrument?

A set of 12 spectrometers with a total of 60 photomultiplier tubes (PMTs) and 16 photometers simultaneously record SOR(t) several times per year from year to year. Each of the 76 recording channels is fully calibrated with high accuracy to compensate for degradation and/or instrumental efficiency changes. Local time is constant in a sun-synchronous orbit from a stable orbit at 800 km. SOT(t) detects radiation from clouds, atmospheric species and various surfaces 300 days resulting in an annual SOR_a number from each channel. Although no absolute SOR numbers are available, there are the annual changes of interest. These directly observed SOR_a data cannot be derived from oceans, which introduce average numbers over periods of up to 10 years with uncertainties due to changing ocean currents and the consideration of corresponding lower bounds of depth over the globe.

Although the SOR_a numbers do not represent an absolute scale, the annual changes are of interest.

The statistical annual changes in the spectral range from 200 nm to 1100 nm certainly will provide new insights in our climate system.

With my best regards,

Gerhard Schmidtke.