

Gaps and Advances in the Validation of Satellite EO Data and their Uncertainties: Case Studies on Atmospheric Ozone Data Records

Tijl Verhoelst¹, Daan Hubert¹, Arno Keppens¹, Steven Compernolle¹, Jean-Christopher Lambert¹, Alberto Redondas², Alexander Cede^{3,4} Royal Belgian Institute for Space Aeronomy (BIRA-IASB), Brussels, Belgium, ² Agencia Estatal de Meteorología (AEMET), Izaña, Spain ³ NASA/Goddard Space Flight Center, GSFC, Greenbelt, MD, USA, ⁴ LuftBlick, Innsbruck, Austria



An essential aspect of all methods described here is the differentiation between random and systematic uncertainty components (and potentially the inbetween: structured random/systematic). This is picked up by both the satellite and ground-based communities, e.g. in the ISSI TUNER activity (PI: T. von Clarmann) and the anticipated reprocessing with detailed uncertainty characterization by EUBrewNet and the Pandonia Global Network. Together with the methods and quality indicators presented here, this facilitates a step-change in metrological traceability of the data sets by assessing the quality of the measurements *including* their reported uncertainties.

$$\frac{1}{2} + u_2^2$$

FALSE	significance level ¹
uspicious	32%
cantly different	4.5%
consistent	0.27%











