



Read-me for Data Users

MEMORANDUM FOR: The JPSS Program Record
SUBMITTED BY: JPSS NUCAPS Products Team Lead, Ken Pryor
CONCURRED BY: JPSS Algorithm Management Project Lead Lihang Zhou
APPROVED BY: JPSS Program Scientist Mitch Goldberg

SUBJECT: NOAA-20 Provisional maturity status
DATE: 04/23/2020/

Provisional maturity status declaration for CO₂

Maturity Review Date: 04/23/2020
Effective Date: 04/23/2020
Operational System: NUCAPS, Version # HEAP 2.2

The JPSS Algorithm Maturity Readiness Review Board approved the release of the NUCAPS to the public with a Provisional maturity level quality as of 04/23/2020 (effective date), based on JPSS Validation Maturity Review held on 04/23/2020 (link to review artifacts).

1. Maturity stage definition (<http://www.star.nesdis.noaa.gov/jpss/AlgorithmMaturity.php>)
2. Algorithm Description:

List of Products (Collection Short Name (CSN): 'NUCAPS-EDR')

- Carbon Dioxide (CO₂)

Product requirements/Exclusions (L1RDS): see artifact at TBD

Quality flags (Table): See artifact at TBD

Product evaluation/validation: See artifact at TBD

Product availability/reliability

N20 NUCAPS-EDR data been produced since 5/23/2018 (Beta maturity) with V4.3. The primary change from HEAP 2.1 (CO₂ Beta maturity version based on the maturity review dated 10/24/2019, and currently in NDE I&T) to the current version HEAP 2.2 (CO₂

Provisional maturity version based on the maturity review dated 04/23/2020) includes updated CO₂ a-priori and CH₄ QC flags. A hierarchy of data sets were used to validate the products and achieve provisional maturity.

Algorithm performance dependence: None

Known errors/issues/limitations: TBD

3. Changes since last maturity stage: Beta to Provisional
4. Review board recommendations
5. Path Forward/Future Plan: Future enhancements may include upgrades to the quality flags embedding super-saturation, NUCAPS algorithm improvements with CAMEL emissivity for improved land surface emissivity characteristics, potential improvements towards swath edges using local angle corrections. Collaboration with NOAA/ESRL in the implementation of the CO₂ product in numerical weather prediction model data assimilation.
6. Additional Items to note



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Additional information is available in the {JPSS Product} algorithm theoretical basis document (ATBD) and validation maturity review briefing, which can be accessed at:

<http://www.star.nesdis.noaa.gov/jpss/Docs.php>

Point of Contact:

Name: Ken Pryor

Email: Ken.Pryor@noaa.gov

Phone: (301)683-3575