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| WORLD METEOROLOGICAL ORGANIZATION  COMMISSION FOR BASIC SYSTEMS  -----------------------------  FOURTH MEETING OF  INTER-PROGRAMME EXPERT TEAM ON DATA REPRESENTATION MAINTENANCE AND MONITORING  GENEVA, SWITZERLAND, 30 MAY - 3 JUNE 2016 |  | IPET-DRMM-IV / Doc. 2.2 (9)  (27. 5. 2016)  -------------------------  ITEM 2.2  ENGLISH ONLY |

GRIB

New table entries for GRIB2 to represent GRAPES model products

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**Summary and Purpose of Document**

This document proposes some new entries in Code Table 4.2 and 4.5 to encode GRAPES model products in GRIB2.

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**ACTION PROPOSED**

The team is invited to validate the proposed entries to be included in FT2016-2.

**DISCUSSIONS**

GRAPES (Global/Regional Assimilation and PrEdiction System) is the numerical weather prediction model developed by CMA. GRAPES\_MESO was developed in 2001 and operational running in 2008. The horizontal resolution is 0.1 \* 0.1 degree, the total number of vertical level is 49, and the maximum forecast time is 84 hours. GRAPES\_GFS was developed in 2007 and pre-operational running in 2009, and would be operational running in 2016. The horizontal resolution is 0.25 \* 0.25 degree, the total number of vertical level is 60, and the maximum forecast time is 240 hours.

There are several new table entries are need to be added to code table 4.2 and 4.5 to encode GRAPES\_MESO and GRAPES\_GFS products in GRIB2.

**PROPOSAL**

1. New parameters in code table 4.2

Product discipline 0 – Meteorological products, parameter category 0: temperature

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| --- | --- | --- | --- |
| **Number** | **Parameter** | **Units** | **Description** |
| 28 | Temperature advection | K s-1 | Temperature advection is the advection of temperature by the wind. It refers to the change of temperature caused by movement of air by the wind. Warm advection (positive value) indicates the temperature is increasing, and cold advection (negative value) indicates the temperature is decreasing. |

Product discipline 0 – Meteorological products, parameter category 2: momentum

|  |  |  |  |
| --- | --- | --- | --- |
| **Number** | **Parameter** | **Units** | **Description** |
| 45 | Vorticity advection | s-2 | Vorticity advection is the advection of relative vorticity by the wind. It refers to the change in vorticity caused by the movement of air by the wind. Positive value corresponds to the rising motion, negative value corresponds to the sinking motion. |

1. New entry in code table 4.5

**Code table 4.5** – *Fixed surface types and units*

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| --- | --- | --- | --- |
| Code figure | Meaning | Unit | **Description** |
| 115 | Sigma height level | – | Sigma height level is the vertical model level of the height terrain-following coordinate ( Gal-Chen and Somerville, 1975 ). The value of this fixed surface is equal to the number of the vertical model level. |