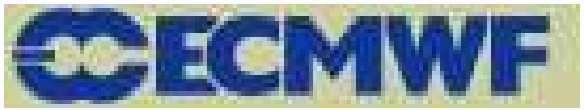


Consortias Progress in the Interoperability Programme

Aladin activities for I-SRNWP

J.-M. Audoin, A. Bogatchev, D. Degrauwe, R. El Khatib, C. Fischer, O. Spaniel

Exeter, Oct. 4 - 7 2010

17th SRNWP & 32nd EWGLAM meeting

METEO FRANCE
Toujours un temps d'avance

Roadmap of tasks: description, status, contributors, remarks

Coordination & support	Documen -tation	Test files	Adapter « 902 »	Adapter « 903 »
Financial, visits, roadmap	Specific doc for Interop purposes	Delivery of GRIB2 test files on the data hub	Converts model input files into FA re-entering files: ▪Call IOSTREAM (read) ▪Preparation (conversion of fields on the vertical and surface) ▪Call FPOS 927 mode (including spectral transforms) ▪Call FA (write)	Converts pre/post-processed files into post-processed files: ▪Call IOSTREAM (read) ▪Some preparation ▪Call FPOS (horizontal part only) ▪Call FA (write)
ongoing	About completed	First sets ready	Planned in 2011	Prototype under development
C. Fischer (Fra), O. Spaniel (Slk)	M. Niculae (Rom)	J.-M. Audoin (Fra)		A. Bogatchev (Bul), D. Degrauwe (Bel), J.-M. Audoin

Further comments

- GRIB_API / GRIB2:
  - Will need to support Aladin's rotated Mercator plane projection
  - a vectorizing GRIB_API library should be delivered soon by ECMWF (on top of the optimisation by NEC at DWD last summer)
- Adapters:
  - We chose first to develop a prototype for converting post-processing type of files => build upon existing change of geometry code + GRIB_API
  - Later: extend this configuration to model re-entering files (handle surface & vertical part, spectral transforms)

  => This strategy was adopted to match the decisions of the Dec. 2009 Reading workshop
- Documentation: was overhauled to take into account the outcome of the Dec. 2009 Reading discussions

COSMO Activities

Work in 2010

- Vertical coordinate / vertical grid of the COSMO-Model
  - A COSMO-internal discussion about coding the vertical grid in Grib2 has been initiated early 2010
  - For the Gal-Chen height based hybrid coordinate it is possible to code the grid with typeOfLevel=118, the corresponding orography (as a 2D field) and vertical coordinate parameters
  - This is NOT possible for e.g. the SLEVE coordinate
  - The COSMO discussion led to a proposal to the WMO Commission for Basic Systems (IPET-DRC: Inter-Programme Expert Team on Data Representation and Codes). A new vertical coordinate type is proposed, where no vertical coordinate parameters together with a 2D field are given, but a full 3D field with the heights of every grid point is specified.
  - The proposal has been discussed also with Enrico Fucile (ECMWF)

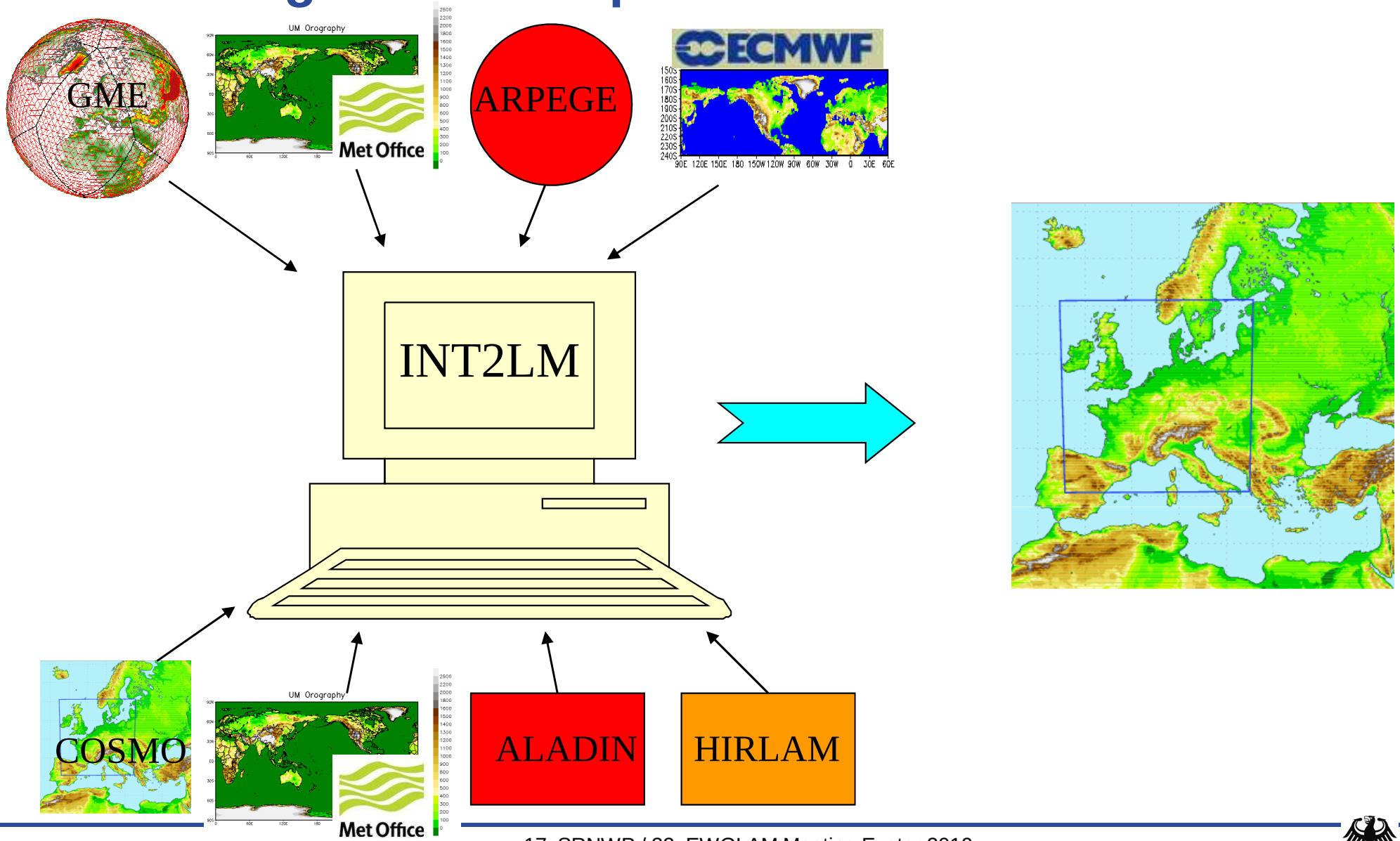
Work in 2010

- grib_api
  - grib_api has been established at some COSMO centres to be the official Grib(2) library (DWD, MeteoSwiss, ARPA-SIM Bologna)
  - Work is in progress to improve performance on NEC machines (together with NEC, ECMWF and MeteoFrance)
  - It has been implemented in FieldExtra for reading and writing. FieldExtra therefore can now produce the parameters of the standard output format list directly
  - Work is in progress, to implement it into INT2LM

Work in 2010

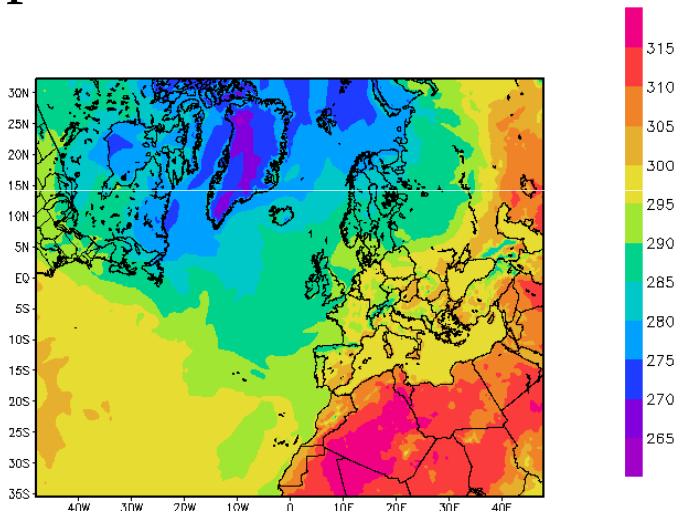
- New Grib 2 test data set and documentation
  - A new Grib2 test data set, which has been produced by FieldExtra, has been provided. This still has the old (Grib1-style) coding of the vertical coordinate
  - On September 30th, a test data set with typeOfLevel=150 has been provided
  - No Grib2 test data has been provided with typeOfLevel=118, because this might not be the default case any more (if proposal is accepted)
  - No surface test data (according to the guidelines from the ET on Surface Aspects) has been provided up to now
  - The minimum required level documentation has not yet been updated according to the plans from last workshop
    - describe native grids
    - describe fields in the standard output list: what field is it, what does it represent in the generating model

Working on the Adaptors

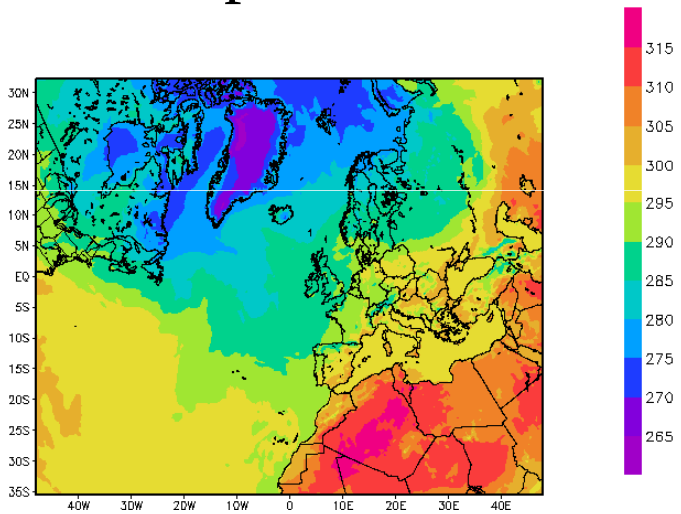


Temperature on the lowest COSMO Level interpolated from

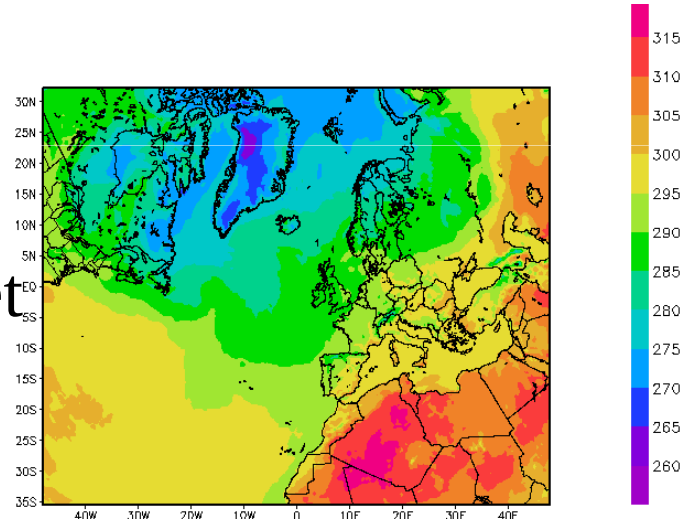
GME



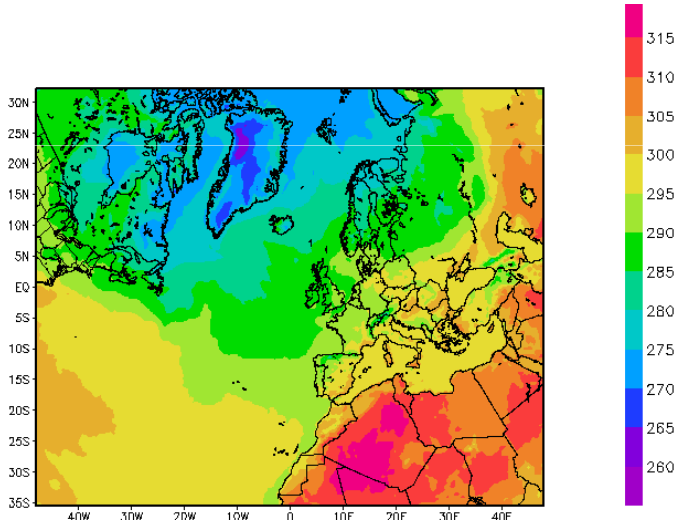
IFS



UM Aemet



UM DWD



Activities in the SRNWP-I

- Concentrated work on building the Grib1-Grib2 converter within the HIRLAM reference system
- Worked on conversion of fields from the standard output format list
- Provided a data set for upper air data and near surface data

Interoperability:
Met Office Progress report

Glenn Greed Oct 2010

Software Adaptor Progress

Met Office propriety model file format is FieldsFile (FF).

Post processing software **FIELDCALC** "actions" have been extended to include:

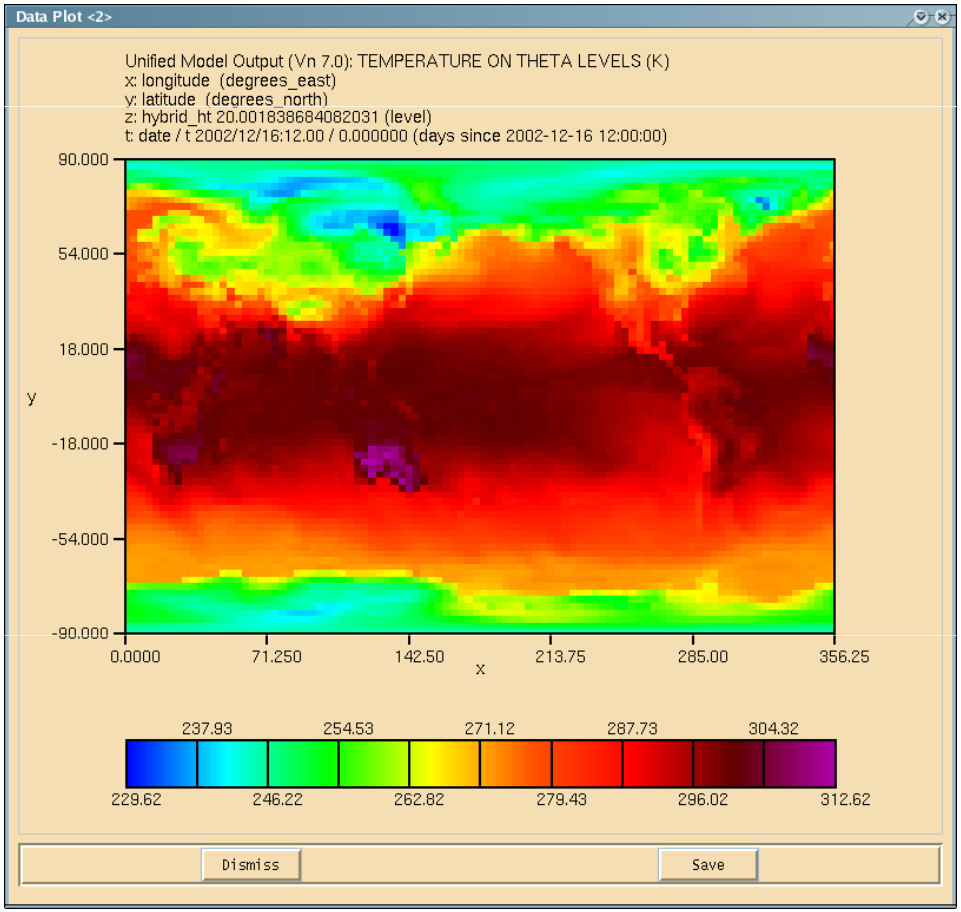
"gribify" (**FF→GRIB2**) and "degribify" (**GRIB2→FF**).

FIELDCALC uses GRIB_API and a simple translation_table between FF Stashcodes and GRIB2 parameter ids and/or items.

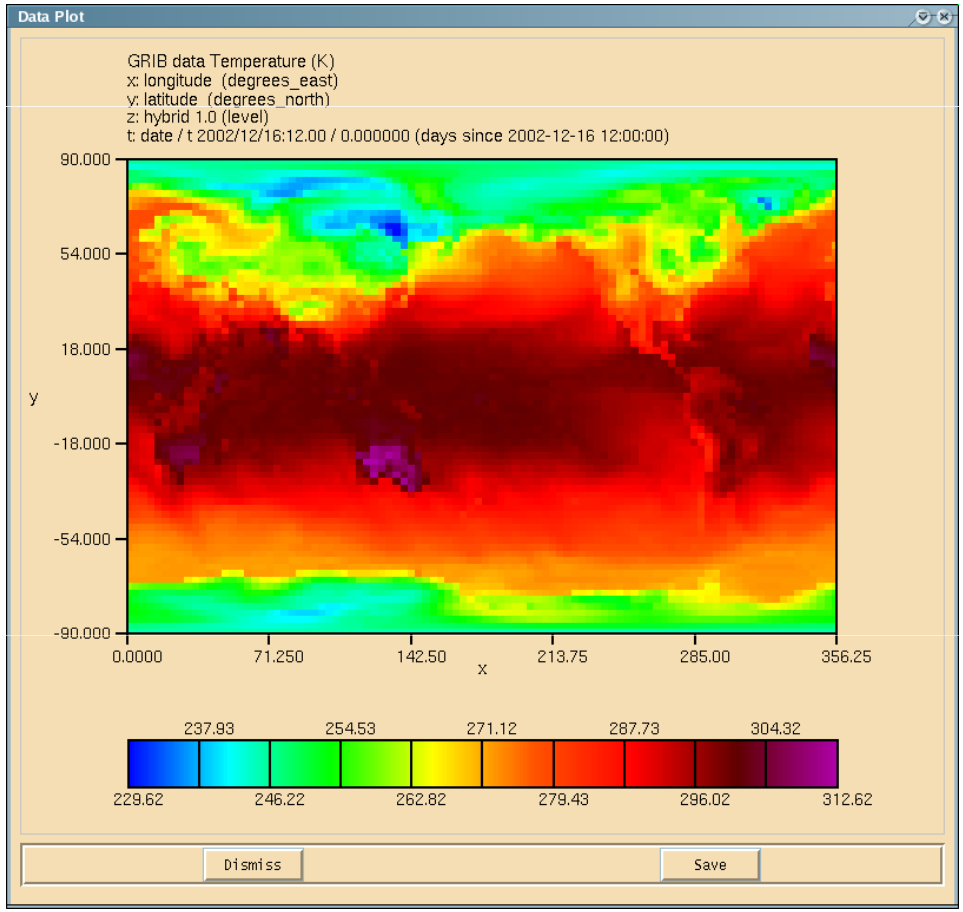
Supports all fields in Standard Format *and ignores any extra fields found in the original FF or GRIB2 data.*

Use Met Office "pumf" and "grib_dump" to compare header/field information.

Software Adaptor Progress

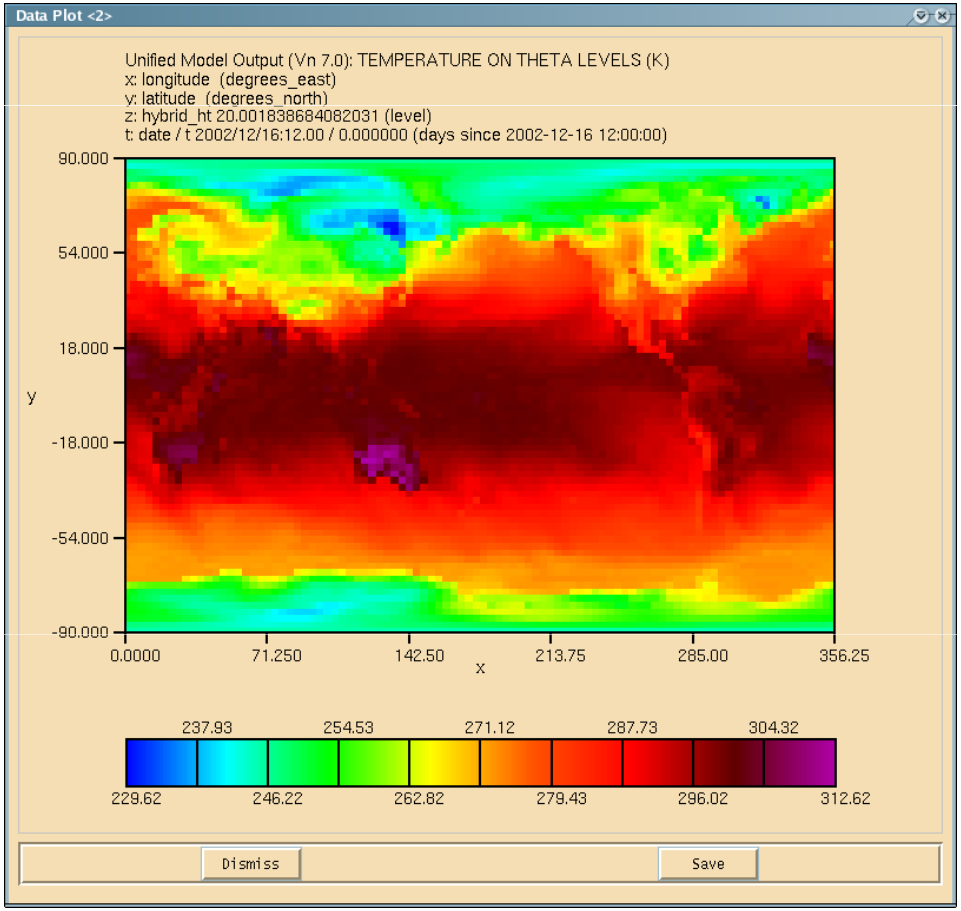


FF

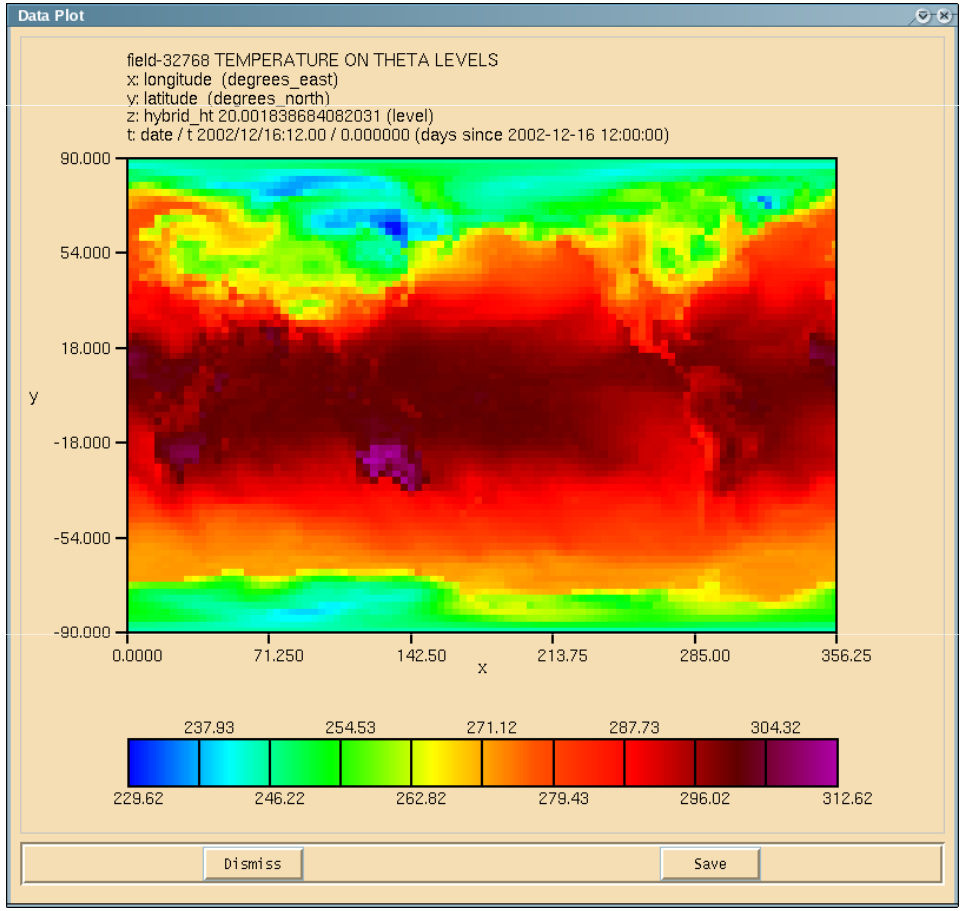


FF→GRIB(2/1)

Software Adaptor Progress



FF



FF→GRIB2→FF

Issues

- Visualisation of GRIB2 files
  - For comparison of FF and GRIB2→GRIB1.
  - Installations of Xconv and Metview do not support GRIB2
  - IDL solution has been developed

- Using GRIB_API v1.8 that does not recognise 118,119 hybrid levels

- Extraction of GRIB2 header info for use in FF header.
  - Currently assume 365 day calendar.
  - Level dependent constants require more work.

- Size of Standard format files when including model level data at operational resolutions.
  - Level of Packing of GRIB2 data?

Outstanding Work

- Initiate a UM model run from GRIB2 ECMWF data.
- Support for other consortia model grids (interpolations).

- Support of LBC file creation from standard format GRIB2 files.
    - Extend Met Office MakeBC Utility.

- Surface fields not yet considered.

- Formalising testing of the adaptor.

Questions and answers

Activities in the SRNWP-I

- Provide data server where consortia and ECMWF can upload test data
- Provide GRIB-API and together with that support to the users
- Discussions within SRNWP-I about GRIB2 issues (e.g. vertical grids)
- Minimal documentation for IFS model data is available on the data server