Explore the BUFR WORLD

Introduction to BUFR decoding with ecCodes

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Python decoding BUFR

Input arguments
Output arguments

Open BUFR file

```
ifile = open(filename)
```

ifile: id of the opened file to be used in all the file functions
filename: name of the file to be open

Close BUFR file

```
ifile.close()
```

ifile: the id of the file to be closed

Python decoding BUFR

Input arguments
Output arguments

- Load in memory a message from a file.

  ibufr = codes_bufr_new_from_file(ifile)

  ifile: object of the file opened with codes_open_file
  ibufr: id of the message loaded in memory

- Free the memory for the message referred as ibufr

  codes_release(ibufr)

- Check!

  if ibufr is None:

    …

Python decoding BUFR

- Get the value of a scalars from a message

```
value  = codes_get(ibufr, key)
```

ibufr: id of the message loaded in memory
key: key of the variable
value: value of variable

Input arguments
Output arguments

- Get the array values of a variable from a message

```
value = codes_get_array(ibufr, key)
```

ibufr: id of the message loaded in memory
key : key of the variable
value: an array of variable values

Python decoding BUFR

- We need to instruct ecCodes to unpack the data values

```
codes_set(ibufr, 'unpack', 1)
```

Input arguments
Output arguments

- Loop over messages

```
while 1:
    ibufr = codes_bufr_new_from_file(ifile)
    codes_set(ibufr,'unpack',1)
    ! Read  variables values
      year = codes_get(ibufr, 'year')
      latitude = codes_get_array(ibufr, 'latitude')
    ! Release the BUFR message
      codes_release(ibufr)
```