Wikiprint Book

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Introduction and usage recommendations

In this section a number of examples for data download and visualization/analysis are presented within the R environment, through the `loadECOMS` function. Note that this section is still under construction and permanent update. Further examples will be added soon.

The examples given have been kept deliberately simple in order to preserve a moderate output size (<150 Mb) and reasonable execution times (<10 minutes), although larger (thus more time-consuming) requests can be done. The limitations in data loading depend essentially on two factors:

1. **Object size**: Requesting too large objects may deplete the available memory. Currently R runs on 32- and 64-bit operating systems, and most 64-bit OSes (including Linux, Solaris, Windows and OS X) can run either 32- or 64-bit builds of R. The memory limits depends mainly on the build, but for a 32-bit build of R on Windows they also depend on the underlying OS version. For more details, type in the R console `help("Memory-limits")`
2. **Loading time**: The time spent in a request does not depend exclusively on the size of the object to be loaded, but also largely depends on the characteristics of the internet connection and the ECOMS-UDG traffic load at the moment of accessing the data. Thus, if the data request takes too long, we strongly advice to simplify the requested dataset and try to divide the job into smaller queries.

The `ecomsUDG.Raccess` package has been built using a (Linux) 32-bit OS, as well as all examples and time estimates. Thus, the performance may vary significantly depending on the aforementioned factors. As a rule of thumb, this would be a recommended usage of the `loadECOMS` function:

- **Point-scale** data retrieval: Objects in this case are relatively small because the longitude and latitude dimensions are dropped. As a result, it is possible to load all members (in the case of forecast datasets) for the whole time span (typically around 30 years) without memory problems.
- **Regional-Continental** queries: Depending on the size of the spatial window, it may be possible to access all members, but preferably a few members should be selected, and time spans no longer that a decade.
- **Global** queries: It is recommended that in this case single-member, single-year selections are done.

Examples

The following examples illustrate the data loading process and can serve as a reference to give estimates of time and resulting object size of typical requests:

- EXAMPLE 1: Single Point Selections?
- EXAMPLE 2: Continental Domain Selections?
- EXAMPLE 3: Global Domain Selections?