Issues and new ides from users

NCAR

❖ **Rewrite whole code to fortran90/95 – a general community standard s**

Benefits

- More straightforward coupling to other codes written in F90+ standard
- Better memory storage - allocatable arrays/dynamic memory allocation
- Simpler coding structure - intrinsic operators between conformable arrays
- Potential increase in whole code performance

Drawbacks

- ❑ A significant code extensions are planed which require hardcode coupling with other EULAG clones written in F77 standard (MHD/ Ocean/ compressible)
- ❑ Direct coupling to other codes (e.g. CAM/COSMO) is not frequent, and requires severe hard coding changes due to different grid structure, parallelization, variables semantics – factors not related to F77/F90/95 standards.
- ❑ Allocatable arrays may be used in current code, performance drawbacks exists
- ❑ The intrinsic operations on array sections and elements are less clear in the case of complicated loops structure with nonsymmetrical logic (e.g. BC, differential operators), using mixed structures could make the code hard for debugging
- ❑ In the initial comparison the EULAG F90 code was 15% slower than F77 code.

❖ **Temporary alternative – investigate use of modules in current code**

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❖ **Use of an official repository for code access and development**

Benefits

❑ While the version control system repository (as e.g. client/server CVS repository) is a standard among developers of many applications

Drawbacks

❑ Limited applicability due to fact that almost none of current EULAG users and developers uses such repository in their work,

❑ A web accessible 'repository' with DEMO codes and tools is already available for users. Such repository will be further extended to include new versions of the code and additional tools.

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❖ **explicit definition of variables precision**

Benefits

☐ **An arbitrary precision may be easily defined for interface variables with KIND attribute**

☐ **Changes may help in solving problems which comes from linking with external precompiled libraries**