

ESMValTool and Support for Multiple Programming Languages

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Benefits of supporting multiple languages

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- Extend the pool of contributors (promote comfort and confidence)
- Port of existing metrics already written in a given language
- Extended functionality and support for existing libraries that can be easily imported

Cons

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- Extended dependency environment, difficult to maintain
- Restricted expertise (especially with obscure languages/dependencies)
- EOL support (e.g. NCL)
- Learn to say NO (not easy!)

Diagnostics: distribution of languages

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Support for:

- Python (>=3.6)
- NCL (>=6.5.0)
- R (r_base>=3.5)
- Julia (about >=1.5)

244 diagnostic scripts in esmvaltool/diag_scripts:

- 111 Python scripts (.py) -> 45%
- 85 NCL scripts (.ncl) -> 35%
- 45 R scripts (.R) -> 18%
- 3 Julia scripts (.jl) -> wee bit

Dependency tree:

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Number of direct dependency packages per language:

(use: conda-tree depends \$PACKAGE)

- esmvaltool: 36 + 7 for tests

- Python: 13
- NCL: 32
- CD0: 13 (not a language!)

Some dependencies may be shared at lower levels (like netCDF4, hdf5 etc.)

