

News from the openCFS repositories

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New Features



since 2025S

- Curvilinear PML
- Topology optimisation: Acoustics, Feature Mapping
- Periodic BCs in magnetics (cakePieceProjection)
- nonlinear permeability for magnetostatics in AV-formulation
- thinLayer formulation on NCI for MechPDE
- strain-stiffening and additional results for the smooth PDE
- Tensors can now be aligned with a vector field
- Define material rotation for regions
- linear Kelvin-Voigt (KV) Damping Model for MechPDE
- user defined nodes can now be specified much more flexibly
- the time integration scheme can now be selected via input XML

Fixes and Improvements



since 2025S

- fix ElemShapeMaps access
- fluidMechStress as option for Enight, add some user outputs
- fix Joule losses (SpecialAV PDE)
- fix Lorentz force (for multiharmonic analysis)
- fix memory leaks
- Correct normal vector orientation for Nitsche NCI
- 2.5D Acoustics

Infrastruructure changes / Developer notes



since 2025S

- updated cfsdeps: gidpost 2.13, Netlib/Lapack 3.12.1, boost 1.90, FLANN is now nanoflann 1.10.0
- timers and sub-times are really helpful (e.g. 54d6fc96, c3084d85)
- logging is great (e.g. 8c9eb309, d9a68283, 641c34a8)
- replaced many boost functions by std: unordered_set, map, tuple, hash, any, hash_range, date_time, filesystem, shared_ptr (33b4daba, 51a7d0a5, 19aafea3, ef862dea, 119e3937, 9b89a53b, 6a38ccd3)
- renamed directory source/cfsdat/Utils to DatUtils (7432993b)
- pipeline fixes (02bda982, 537be824, 864d151e)
- Adaptions for CMake 4 (df9ec540)
- new CDash server: <http://am-ko.mi.uni-erlangen.de/cdash>
- SinInputMESH is now much faster (c23d49bb)
- modern PyInitialize() for python 3.12 (24f8572e)

Heavy Headache, Ideal Implementation, Just Jacobians, ...

What should be the upcoming release names?

2026S K...K...

2026W L...L...

my impressions

from 2025-2026



- Including the Testsuite into the main repo worked great!
- We should do more to advertise great new (and old) features
- Discuss before you implement . . .
- Merge small things

Some Ideas for the Furture



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- Code reviews also from junior developers