FrontISTR v5.4 Release Note

FrontISTR commons

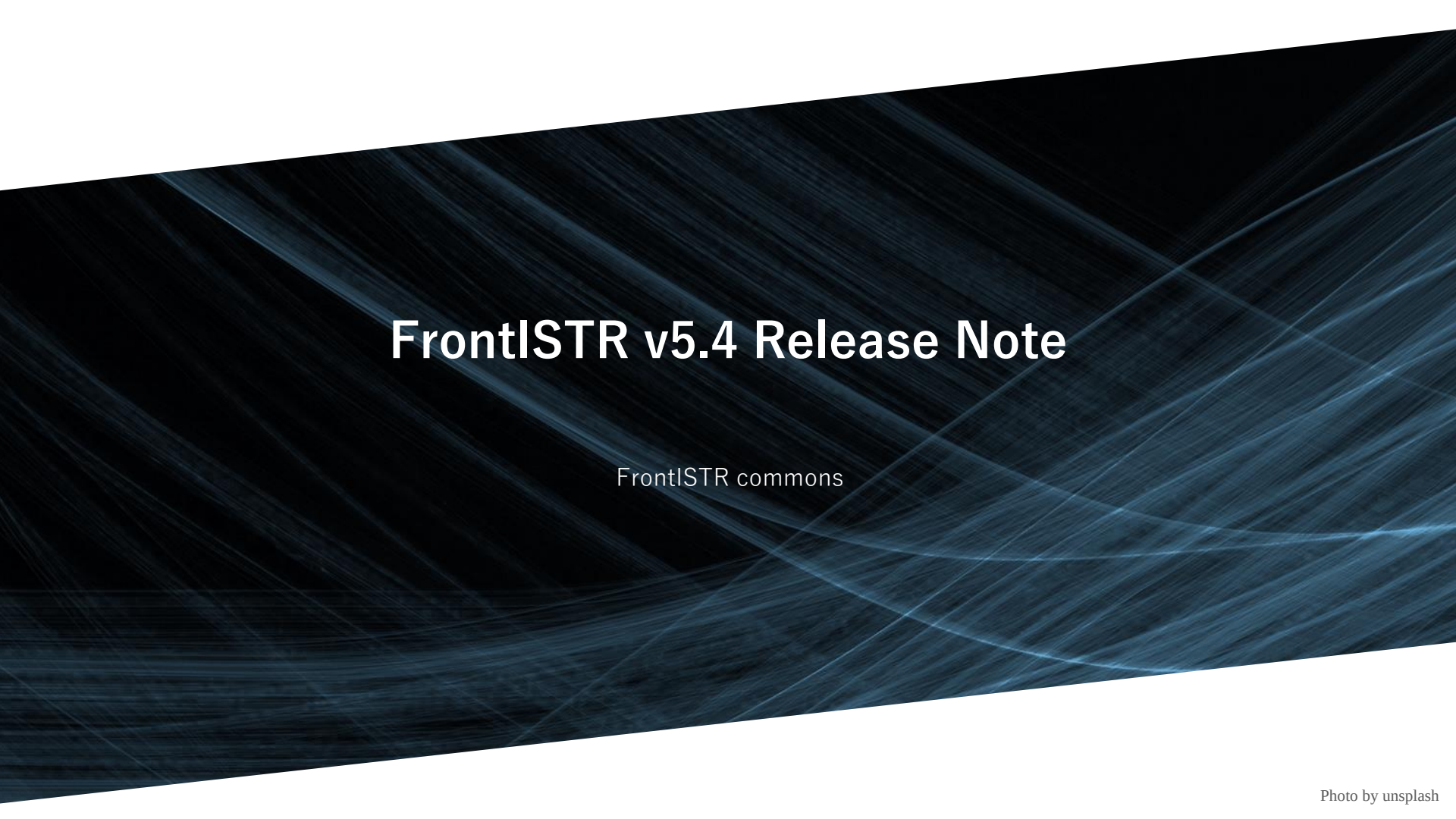

Photo by unsplash

FrontISTR ver. 5.4 has been released!

FrontISTR v5.4

- Release date: July 8, 2022
- Changes from ver. 5.3
  - Improvements : 3
  - Specification changes: 7
  - Bug fixes: 15

version	release date
Ver. 4.4	2015/02/17
Ver. 4.5	2016/07/22
Ver. 4.6	2017/09/14
Ver. 5.0	2019/10/18
Ver. 5.1	2020/06/30
Ver. 5.1.1	2020/11/13
Ver. 5.2	2021/4/9
Ver. 5.3	2021/11/11
Ver. 5.4	**2022/07/08**

Improvements

- #141 Output FLOPS values
- #425 Add test sample for contact analysis
- #459 Improve efficiency of hecmw_mat_con

Specification changes

- Code organization (refactoring) for Lagrange multiplier method contact analysis
  - #101 Define Lagrange multiplier matrix in HEC-MW
  - #421 Use conMAT for matrix structure of contact analysis at all times
  - #422 Refactoring fstr_matrix_con_contact
  - #423 Rename fstrMAT and move it to the hecmw side
  - #424 Refactoring the solve_LINEQ_contact solvers on FrontISTR side
- #316 Remove Document(Manual)-CI from FrontISTR's gitlab-ci.
- #438 Clean up cmake_minimum_required

Bugs fixed

- #205 Shell element stratified results output does not output mises stresses.
- #338 Error stop when coordinate value contains a floating point number with one significant digit in the mantissa.
- #371 Occurrence of division by zero in certain development environments
- #378 Restart input/output problem for dynamic analysis with SURF-SURF contact
- #381 Tutorial 04_hyperelastic_spring does not converge
- #397 Error loading temperature (two or more temperatures) dependent property values for creep Norton law
- #409 SIGSEGV during partitioning of contact model
- #411 [bug] Contact analysis functionality in parallel computation (continued from inquiry 1220302050) (1562686629)
- #427 Domain decomposition fails for models with contact
- #428 Error when hostname Rank is longer than Rank 0
- #429 When Lagrange multiplier method and MPC constraint with degrees of freedom elimination method are used together in parallel analysis, their matrix resizing processes (e.g. hecmw_mpc_mat_ass) are not consistent and the analysis fails.
- #439 In a multi-step analysis of unsteady heat transfer, the totaltime is not progressing properly.
- #457 Bug with contact pair name resolution.
- #458 Hecmw_solver_las_22 must call 2_R instead of hecmw_update_3_R
- #460 Internal direct method and DIRECTmkl are not available in sequential contact analysis

Acknowledgements

- **Contributors**

FrontISTR.git

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FrontISTR_manual.git

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Bug reports

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- Count the number of commits merged into the release branch in the git repository (Merge commits are not counted)
- Command: git log --no-merges [previous release branch]. .[This release branch] | grep -e Author | sort | uniq -c | sort -nr
- Author name deviations are manually merged

Thank you very much for your cooperation!

FrontISTR

Large-scale Parallel Finite Element Analysis Open Software on HEC-MW

Version 5.4 now available

2022/07/08