

OpenFoam Assignment | The Lid-Driven Cavity

Akhil Sadam

Aerospace Department, University of Texas at Austin

E-mail: `akhil.sadam@utexas.edu`

Archithaa Mohan

Aerospace Department, University of Texas at Austin

E-mail: `archithaamohan@utexas.edu`

Long H. Vu

Aerospace Department, University of Texas at Austin

E-mail: `--@--`

Abstract. –SAMPLE ABSTRACT–

Keywords: computational fluid dynamics, CFD, incompressible, Paraview, R, Python, coe347, spring 2022

1. Motivation

why cavity is important

2. Implementation

We implement all simulation with OpenFoam, analysis with Paraview and Python3 , and documentation code in R (Xie; 2021a; Urbanek; 2021; Xie; 2021b; Bengtsson; 2021; Allaire et al.; 2021; Xie; 2013, 2015, Xie (2014),Xie et al. (2018),Xie et al. (2020)).

3. Some Text

— some text —

4. Conclusion

—conclusion here—

References

Appendix

Thank you so much for reading this work!

References

Allaire, J., Xie, Y., McPherson, J., Luraschi, J., Ushey, K., Atkins, A., Wickham, H., Cheng, J., Chang, W. and Iannone, R. (2021). *rmarkdown: Dynamic Documents for R*. R package version 2.11.

URL: <https://CRAN.R-project.org/package=rmarkdown>

Bengtsson, H. (2021). *R.utils: Various Programming Utilities*. R package version 2.11.0.

URL: <https://github.com/HenrikBengtsson/R.utils>

Urbanek, S. (2021). *jpeg: Read and write JPEG images*. R package version 0.1-9.

URL: <http://www.rforge.net/jpeg/>

Xie, Y. (2013). animation: An R package for creating animations and demonstrating statistical methods, *Journal of Statistical Software* **53**(1): 1–27.

URL: <https://doi.org/10.18637/jss.v053.i01>

Xie, Y. (2014). knitr: A comprehensive tool for reproducible research in R, in V. Stodden, F. Leisch and R. D. Peng (eds), *Implementing Reproducible Computational Research*, Chapman and Hall/CRC. ISBN 978-1466561595.

URL: <http://www.crcpress.com/product/isbn/9781466561595>

- Xie, Y. (2015). *Dynamic Documents with R and knitr*, 2nd edn, Chapman and Hall/CRC, Boca Raton, Florida. ISBN 978-1498716963.
URL: <https://yihui.org/knitr/>
- Xie, Y. (2021a). *animation: A Gallery of Animations in Statistics and Utilities to Create Animations*. R package version 2.7.
URL: <https://yihui.org/animation/>
- Xie, Y. (2021b). *knitr: A General-Purpose Package for Dynamic Report Generation in R*. R package version 1.36.
URL: <https://yihui.org/knitr/>
- Xie, Y., Allaire, J. and Golemund, G. (2018). *R Markdown: The Definitive Guide*, Chapman and Hall/CRC, Boca Raton, Florida. ISBN 9781138359338.
URL: <https://bookdown.org/yihui/rmarkdown>
- Xie, Y., Dervieux, C. and Riederer, E. (2020). *R Markdown Cookbook*, Chapman and Hall/CRC, Boca Raton, Florida. ISBN 9780367563837.
URL: <https://bookdown.org/yihui/rmarkdown-cookbook>