

Corrigendum

Corrigendum to “Dynamic LES of colliding vortex rings using a 3D vortex method” [J. Comp. Phys. 152 (1999) 305–345]

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Due to an error in a postprocessing subroutine, Figs. 13 and 14 (a) and (b) of [1] are incorrect. The error occurred when evaluating the strain-rate magnitude $|\dot{S}|$, where instead of adding two terms, they were multiplied together. Consequently the strain-rate magnitudes reported in Fig. 13 and used in Fig. 14(a) and (b) are too large. The corrected graphs are reproduced below.

The strain-rate in the 3D vortex method LES code was evaluated correctly, and thus the simulations of [1] and all figures other than 13 and 14 are correct. The only conclusion and text that is affected by the change relates to the distribution of eddy-viscosity as function of vorticity magnitude. The last sentence in

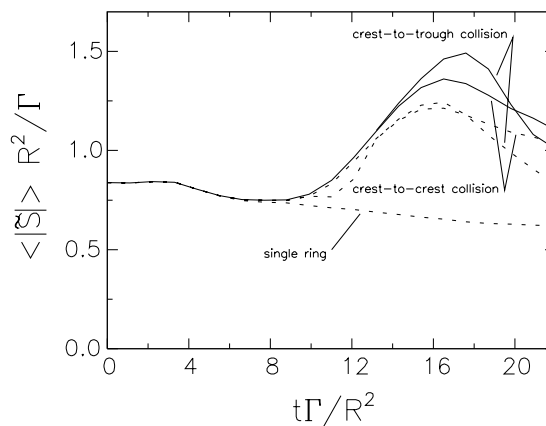


Fig. 13. Strain-rate modulus for simulations with (dashed) and without (solid) turbulence model.

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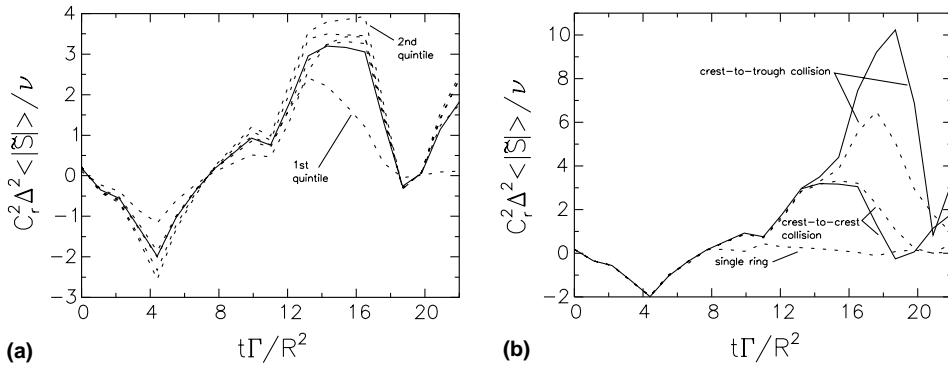


Fig. 14. (a) Eddy-viscosity averaged over all vortex elements (solid line) and averaged over quintiles of the particles ranked by vorticity magnitude (dashed lines) for crest-to-crest collision without turbulence model. (b) Eddy-viscosity for simulations with (dash) and without (solid) turbulence model.

the third paragraph of page 327 should read: “In low vorticity regions the turbulent eddy-viscosity can be about half as large as in high vorticity regions” (instead of orders of magnitude smaller).

Acknowledgements

We are very grateful to Dr. Adrin Gharakhani for noticing and informing us about the discrepancy among figures, which led us to find the programming error.

Reference

- [1] J. Mansfield, O.M. Knio, C. Meneveau, Dynamic LES of colliding vortex rings using a 3D vortex method, *J. Comput. Phys.* 152 (1999) 305–345.