Comments on a paper by Kiya et al. on the numerical simulation of pseudo-elliptical vortex rings using the vortex particle method

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A paper by Kiya et al. (1992, Fluid Dyn. Res, 10, 117–131) on the numerical simulation of pseudo-elliptical vortex ring using the viscous version of the 3-D vortex particle method (Winckelmans 1989 (Ph.D. Thesis); Winckelmans and Leonard 1989 (Proc. Workshop SIAM, 1988), 1992a (to appear in J. Comput. Phys.)) was recently published in this journal. The blame for the poor quality of the numerical results was put on the “Winckelmans–Leonard viscous scheme” (actually, the credit for the viscous method by exchange of particle strengths should go to Degond and Mas-Gallic (1989, Math. Comput. 53, 485–526)). It is the author’s hope that this short note will convince the reader that the method is perfectly sound as long as it is used with care.

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