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Current Research:	Computational Science for Soft Matter / Active Matter	

Direct numerical simulations of active particles with fully resolved hydrodynamics

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We have developed a unique numerical scheme, the smoothed profile (SP) method, to perform direct numerical simulations (DNS) for various of passive and active particle systems [1]. Here we report on our recent results on the applications of the SP method to the systems composed of i) many Quincke rollers and ii) a micro-swimmer in a viscoelastic fluid.

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References: [1] RY, J. J. Molina, and Y. Nakayama, *Soft Matter* 17, 4226 (2021).