

Abstract Submitted  
for the DFD20 Meeting of  
The American Physical Society

**The art of coarse Stokes: algorithmic developments for zero Reynolds number biological flow**<sup>1</sup> DAVID SMITH, MEURIG GALLAGHER, Univ of Birmingham, RUDI SCHUECH, Tulane University — The method of regularized stokeslets has provided an accessible approach for solving biological Stokes flow problems, in particular cell motility and cilia-driven flow for over a decade. In this talk we describe and benchmark some recent algorithmic developments in this method relating to ‘coarse force’ discretization, Richardson extrapolation, higher order accurate ‘blobs’, inclusion of the double layer potential, and GPU acceleration. Alone and in combination, these approaches are capable of significantly extending the scientific scope of the method.

<sup>1</sup>Engineering and Physical Sciences Research Council award EP/N021096/1

David Smith  
Univ of Birmingham

Date submitted: 10 Aug 2020

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