

A new method of simulations of flexible particles in finite Reynolds number flows

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A new method of simulation of flexible fibers in finite Reynolds number flows is developed. A long cylindrical fiber is discretized as a series of segments and each segment is bonded through the Hook law. The fiber can be extended or compressed, bended and twisted under hydrodynamic forces that are calculated from lattice Boltzmann method. A several cases are tested and the results are in a good agreement with experiments.