



# Periodic long-time behaviour for an approximate model of nematic polymers

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We study the long-time behaviour of a nonlinear Fokker-Planck equation, which models the evolution of rigid polymers in a given flow, after a closure approximation. The aim of this work is twofold: first, we propose a microscopic derivation of the classical Doi closure, at the level of the kinetic equation ; second, we prove the convergence of the solution to the Fokker-Planck equation to periodic solutions in the long-time limit.

Subjects: **Analysis of PDEs (math.AP)**

MSC classes: 35B40, 76A15

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