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Recent and Traditional Approaches to Numerical Flow Analysis of Complex Fluids

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Abstract: This article reviewed both traditional continuum-mechanics-based and recent micro-macro approaches to the flow analysis of complex fluids. The flow of viscoelastic fluids such as polymeric liquids was mainly treated. As for the continuum-mechanics-based approach, the development in numerical techniques for stabilizing the numerical scheme was introduced. As for the micro-macro approach, numerical simulations using the CONNFESSIT approach and those based on the Fokker-Planck equation were reviewed. In addition, studies of micro-macro flow analyses of other complex fluids were briefly introduced.

Key Words: [Complex fluid](#), [Viscoelastic fluid](#), [Fluid micro structure](#), [Micro-macro simulation](#), [Numerical simulation](#)

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