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Mode-coupling and generalized mode-coupling theory: a diagrammatic approach GRZEGORZ SZAMEL, Department of Chemistry, Colorado State University — We present a diagrammatic approach to the dynamics of interacting Brownian particles. Within this approach, the time-dependent density correlation function is represented by a series of diagrams with three and four leg vertices. We analyze the structure of this series and obtain a diagrammatic interpretation of reducible and irreducible memory functions. The one-loop self-consistent approximation for the latter function coincides with mode-coupling approximation for Brownian systems that was derived previously using a projection operator approach. Finally, we investigate the diagrammatic interpretation of a generalized mode-coupling theory.

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