Remarks about Diffusion Mediated Transport: Thinking about Motion in Small Systems

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Abstract: We describe a dissipation principle/variational principle which may be useful in modeling motion in small viscous systems and provide brief illustrations to brownian motor or molecular rachet situations which are found in intracellular transport. Monge-Kantorovich mass transport and Wasserstein metric play an interesting role in these developments. Some properties of the system that ensure the presence of transport are discussed.