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Study of chiral molecular diffusion in anisotropic liquids

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Very often the cholesteric liquid crystals are obtained by mixing a small quantity of chiral molecules in a nematic liquid crystal host. The homogeneous mixture is obtained by molecular diffusion, which takes place due to chaotic (thermal) motion of individual molecules. This process is temperature dependent. However, the breakdown of physical symmetry also affects dramatically the diffusion process. In the present work, we study this diffusion for different boundary conditions from orientational point of view. We compare the same diffusion process with the case of non-chiral molecules. Some theoretical estimations are made to try to model the experimentally observed phenomenon.

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