DISCLINATION LOOP IN MORI-NAKANISHI ANSATZ: ROLE OF THE DIVERGENCE ELASTICITY

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Abstract Energetic stability of loop defects in nematic liquid crystal is analyzed using Mori-Nakanishi ansatz and Frank-Oseen theory with non-zero K_{24} divergence term. The ratio of the bulk and divergence elastic constants defines a characteristic material length, which is the equilibrium radius a^* of the disclination ring. Positive K_{24} forces the ring to shrink.