

Mathematical Modeling of Limbless Crawling

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Limbless crawling is observed in the locomotion pattern of large group of animals. True slime mold and amoeba are changing their positions using protoplasmic flow and sol-gel/gel-sol transition. On the other hand, multi cellular crawlers adopt slip/stick motion in the well-coordinated manner. The mechanism itself is quite simple and common, while implementations has wide variety. For example, some gastropods are using the viscoelasticity of mucus. We will present mathematical approaches for the limbless locomotion.

