Co-dimension One Self-Assembly

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Abstract

I will discuss mathematical models and tools for analyzing physical and biological processes that exhibit co-dimension one characteristics. Examples include the self-assembly of Polyoxometalate (POM) macroions into hollow, spherical structures called blackberries as well as the assembly of surfactant molecules into micelles and vesicles. I will characterize when such structures can arise in the context of isotropic and anisotropic models, and will also discuss insights into physical models of these behaviors.

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