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## **Langevin Dynamics for Particles in Membranes**

### **Abstract:**

We discuss extensions of well-established concepts of particle dynamics from Euclidean space to particles in and interacting with membranes by combining basic concepts from coarse grained molecular dynamics and statistical mechanics with analysis and numerical analysis of geometric and stochastic differential equations. A major goal is to derive, analyse, and numerically approximate Langevin dynamics of discrete particles in fluctuating membranes.