

Title:

Mechanical modeling of bacterial cell division and the FtsZ ring

Authors:

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Abstract:

FtsZ, a cytoskeletal protein homologous to tubulin, is the principle constituent of the division ring in bacterial cells. It is known to have force-generating capacity in vitro and has been conjectured to be the source of the constriction force in vivo. Several models have been proposed to explain the generation of force by the Z ring. In this talk, I will discuss a modeling approach to understanding the mechanics of the division ring in bacterial cell division through which we test out a long-standing hypothetical mechanism and use it to estimate the mechanical properties of the FtsZ ring.