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Plenary: Knots in Biology and Fluid Dynamics

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De Witt Sumners
Florida State University

Title: Knots in Biology and Fluid Dynamics

Abstract:

Knots in DNA can interfere with vital cellular life processes, but they can also provide experimental insight into the mechanism of enzymes that facilitate these processes. This talk will discuss the topology of topoisomerase (the enzyme that solves DNA entanglement) and site-specific recombinase (an enzyme that changes the genome). Very similar to DNA recombination is vortex reconnection in fluids, and the topology of anti-parallel vortex reconnection will be discussed.