

CSU PHYSICS COLLOQUIUM

“Materials Physics with Kinetoplast DNA”

Professor Alex Klotz

California State University Long Beach

Monday February 1st at 4:00 pm

Virtual via Zoom (see announcement for link)

Abstract

The biological world is the source of many materials with exotic or desirable properties. Among these, DNA molecules have served as a model system to study the physics of polymers on the single-molecule level. A kinetoplast is an exotic form of DNA, found in certain tropical parasites, that consists of thousands of circular molecules topologically linked together like a sheet of chainmail armor. I will discuss the motivation and path that lead me to study kinetoplast DNA, some recent and ongoing experimental results, and what we can learn about the physics of two-dimensional materials and mechanically-interlocked chemical bonds from studying these DNA structures.

Biography

Alex Klotz is from Toronto originally and obtained his PhD in Physics from McGill University and worked as a postdoc in the chemical engineering department at the Massachusetts Institute of Technology. In addition to his work in experimental biophysics he is best known for his work on terrestrial gravity tunnels.