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Discotic Liquid Crystals without Tails¹ MITCHELL POWERS, JOHN PORTMAN, Kent State University - Physics, SCOTT BUNGE, ROBERT TWIEG, Kent State University - Chemistry, BRETT ELLMAN, Kent State University - Physics — Discotic liquid crystals are typically rigid disc shaped molecules, surrounded by long flexible tails, which self assemble into long columns. The tails form a buffer between columns, and serve as an entropy reservoir which helps to maintain the liquid crystal mesophase. However, these tails are difficult to include in both *ab-initio* and molecular dynamics modeling. Frequently the tails are omitted in calculations and simulations as a convenient approximation, but only rarely are they omitted in nature. In this talk we will discuss a novel group of tailless discotic liquid crystals and their properties, both experimentally and *in silico*. Experimental measurements of these molecules, both mesogenic and non-mesogenic, are used to motivate a molecular dynamics study of these unusual materials.

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