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22207. *Unknotting theta-curves and DNA replication.*

Replication is when a single DNA molecule is reproduced to form two new identical DNA molecules. In the middle of replication a more complex structure is formed. When a circular piece of DNA is replicated the intermediate structure is that of a theta-graph. A theta-graph has two vertices and three edges between them. This talk will focus on unknotting numbers of embedded theta-graphs and understanding DNA replication. (Received September 22, 2021)