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One Shields Avenue, Davis, CA 95616. *Topological Analysis of Chromosome Conformation
Capture Data*. Preliminary report.

Chromosome Conformation Capture (CCC) has revolutionized chromosome biology by uncovering information of the 3D genome that was completely inaccessible by other experimental techniques. The data obtained in a CCC experiment, contact probabilities between different loci of the genome, are estimations of a true underlying distance map between the genomic loci. In this work we first show that the fractal model for mammalian 3D organization is one of several models that are in a agreement with the CCC data and that in fact current CCC methodologies cannot determine the topology of a dense chromosome system (such as the human genome). We end by characterizing some 3D patterns that can be unequivocally extracted from a distance map. (Received July 25, 2017)