

1020-92-187

Javier Arsuaga* (jarsuaga@sfsu.edu), 1600 Holloway Avenue, Mathematics Department, San Francisco State University, San Francisco, CA 94132, and **Trevor Blackstone** and **Mariel Vazquez**. *Linking of chromosomes during interphase*. Preliminary report.

During the early phase of the cell cycle (G0/G1) chromosomes are confined to spherical regions within the nucleus called chromosome territories. The position of these territories is important in a number of biological processes (e.g. transcription, replication and DNA repair) and has important implications in human genetic diseases, in cancer and in the formation of chromosome aberrations after exposure to DNA damaging agents. It has been recently proposed that chromosome territories are surrounded by a network of channels called the Interchromatin Domain Compartment (ICD). It is believed that the ICD compartment plays a very active role in different cellular processes. Other studies on the other hand propose an overlapping between chromosomes that leave little room for an ICD compartment. If such overlapping exists one would expect that the linking probability between two chromosomes is non-trivial. Motivated by this problem we present the initial steps in our investigation of chromosome linking in confined volumes. (Received August 28, 2006)