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**Javier Arsuaga, Yuanan Diao and Kenneth Hinson\*** (kehinson@unc.edu), 1100 S. Main Street, Kannapolis, NC 28081-5436. *The effect of angle restriction on the formation of minicircle networks.*

Kinetoplast DNA in the mitochondria of some trypanosomes is partly organized in a large network of linked minicircles. The arrangement of minicircles is not entirely random; biological or experimental conditions sometimes impose restrictions on their orientations. Continuing the work from our earlier paper, we here investigate the effects of restricting the tilting and azimuthal angles of minicircles. Using the square lattice minicircle (SLM) model we observe how network formation is affected through the criteria of critical percolation density, saturation density, and mean valence. We observe that the type and magnitude of the angle restriction can have a significant effect on topological characteristics of the network. (Received August 01, 2011)