Confined ring polymers as a model nucleoid\textsuperscript{1} BAE-YEUN HA, C. JEON, University of Waterloo, J. KIM, H. JEONG, KAIST, Korea, S. JUN, University of California, San Diego, Y. JUNG, KISTI, Korea — The bacterial chromosome is tightly packed in an intracellular space called the nucleoid with its loci linearly and precisely positioned. Here we propose a model nucleoid: a ring polymer confined in a cylindrical space. When the cylinder-ring parameters are chosen properly, our model describes the observed locus distributions of the \textit{E. coli} chromosome surprisingly well. Our results illustrate how the geometry and function of the nucleoid are interrelated.

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