Mean-field theory of planar absorption of RNA molecules[1] TOAN NGUYEN, Dept. of Physics and Astronomy, University of California, Los Angeles, ROBIJN BRUINSMA, Dept. of Physics and Astronomy, University of California, Los Angeles, WILLIAM GELBART, Dept. of Chemistry and Biochemistry, University of California, Los Angeles — Interaction between the viral RNA and the protective protein capsid plays a very important role in the cell infection and self-assembly process of a virus. To better understand this interaction, we study a similar problem of absorption of RNA on an attractive wall. It is known that the secondary structure of a folded RNA molecules without pseudo-knots has the same topology as that of a branched polymer. We use a mean-field theory for branched polymers to analytically calculate the RNA concentration profile. The results are compared to known exact scaling calculations and computer simulations.

Toan Nguyen
University of California, Los Angeles

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