

Abstract for an Invited Paper
for the MAR07 Meeting of
The American Physical Society

Glassiness in RNA folding

KAY J. WIESE, LPT ENS, Paris

We study secondary structures of random RNA molecules by means of a renormalized field theory based on an expansion in the sequence disorder. We show that there is a continuous phase transition from a molten phase at higher temperatures to a low-temperature glass phase. Based on an exact inequality, we argue that RNA conformations in the glass phase are similar to those at the transition.

[1] M. Laessig and K.J. Wiese, The freezing of random RNA, Phys. Rev. Lett. 96 (2006), 228101.

[2] F. David and K.J. Wiese, Systematic field theory of the RNA glass transition, q-bio.BM/0607044 (2006); accepted for publication in Phys. Rev. Lett.