Field theory of the RNA glass transition

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The secondary structure of random RNA is studied by means of renormalisable field theory. It is shown that there exists a continuous phase transition from a molten phase at high temperature to a low-temperature glass phase. Critical exponents of the glass transition are computed using renormalisation of the sequence disorder. An extension of the theory to systems submitted to an external force permits to caracterise the denaturation transition of random RNA. It therefore provides a direct link to single molecule experiments.