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**Applied stress and the thermal denaturation of DNA** TATIANA KURIABOVA, JOSEPH RUDNICK, Department of Physics and Astronomy, UCLA, Los Angeles, California 90095-1547 — Pulling double-stranded DNA at each end exerts a profound effect on the thermal denaturation, or melting, of a long segment of this molecule. We discuss the effects on this transition of a stretching force applied to opposite ends of one of the DNA strands, including full consideration of the consequences of excluded volume, the analysis of which is greatly simplified in this case. We also discuss the interplay of thermal denaturation and force-generated separation when the tension is generated by a force at the end of one of the duplexed strands and an equal and opposite force applied to the other end of the second strand.

Joseph Rudnick  
Department of Physics and Astronomy, UCLA, Los Angeles, California 90095-1547

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