Abstract Submitted
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Solvable model of mechanical unfolding of proteins[1] OLEG VOROV, UNC at Charlotte, DENNIS LIVESAY, DONALD JACOBS, UNC at Charlotte — We present exact analytical results describing single-molecule experiments on mechanical unfolding of proteins within a realistic model [1]. The corresponding relation between the extension at a given temperature of the macromolecule and the applied force is derived [2]. The configuration partition function is calculated exactly for a distance constraint protein model that describes the beta-hairpin to coil transition. The resulting extension-force curve is derived, and the results agree with the data from the single-molecule pulling experiments.
[1] O.K.Vorov, A.Y.Istomin, D.R.Livesay, D.J.Jacobs, subm. to Phys.Rev.Lett., 2007. [2] O.K.Vorov, D.R.Livesay, D.J.Jacobs, to be subm. to Science, 2007, in preparation.

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Oleg Vorov
UNC at Charlotte

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