Solvable model of mechanical unfolding of proteins\textsuperscript{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 \cite{1}. The corresponding relation between the extension at a given temperature of the macromolecule and the applied force is derived \cite{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.

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