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Alexander Y Grosberg* (ayg1@nyu.edu), Department of Physics, New York University, 4 Washington Place, New York, NY 10003. *Self-avoiding knots*.

The root-mean-squared gyration radius of a non-phantom loop of zero thickness and fixed knot topology is believed to scale as N^ν , where N is the number of segments and ν is the critical exponent which describes the self-avoiding random walk. What happens if self avoidance and topological constraints are presented simultaneously? The zero thickness model has no unitless parameters apart from N , while the self-avoiding model has parameter d/a , where d and a are the segment thickness and length, respectively. There are several numerical studies of the concurrent effect of self-avoidance (chain thickness or ionic strength in case of DNA). In this work, an attempt of a simple minded scaling estimate is presented. (Received February 23, 2009)