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The gyration radius for long-range oriented percolation and self-avoiding walk.

ABSTRACT: In this talk, I present that the gyration radius of order $r \in (0, \alpha)$ for sufficiently spread-out long-range oriented percolation with $p \in (0, p_c]$ and self-avoiding walk with index $\alpha > 0$ is $C_r n^{1/(\alpha \wedge 2)}$ if $\alpha \neq 2$ and $C_r (n \log n)^{1/2}$ if $\alpha = 2$ with corresponding error estimates above the upper critical dimension $2(\alpha \wedge 2)$. Moreover, I exhibit the constant C_r that is a continuous function of $r \in (0, \alpha)$.