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# A short proof of the odd-girth theorem

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Recently, it has been shown that a connected graph $\Gamma$ with $d+1$ distinct eigenvalues and odd-girth $2d+1$ is distance-regular. The proof of this result was based on the spectral excess theorem. In this note we present an alternative and more direct proof which does not rely on the spectral excess theorem, but on a known characterization of distance-regular graphs in terms of the predistance polynomial of degree $d$.

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