# Graph curvatures and polytopes

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The Forman-Ricci and resistance curvatures of a cell complex are real valued functions on edges/vertices respectively that behave in many ways like Ricci curvature in differential geometry. One key feature of both is that global positivity of the curvature implies a bound on the diameter of the graph in terms of the smallest curvature value. It is tempting to ask what happens in the case of polytopes, where bounds for diameters are a topic of interest. We address this question and show that in both cases, positively curved polytopes are scarce (and in some dimensions finite). Joint work with J. De Loera, J. Eddy and S. Robertson.

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