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Jing-Jing Huang* (jingjingh@unr.edu). *Rational points close to a hypersurface and the dimension growth conjecture.*

This talk mainly concerns problems related to counting rational points in a thin neighborhood of a manifold. We have recently solved this problem in the cases of hypersurfaces and affine subspaces, and made some progress in the case of space curves. As an immediate application of the counting results for hypersurfaces, the dimension growth conjecture is established for smooth manifolds which are not flat. There are also significant applications of our results to diophantine inequalities and metric diophantine approximation on manifolds. (Received September 18, 2019)