

Choose your favourite compact manifold  $M$  in  $n$ -dimensional Euclidean space. How many rational points, with denominators of bounded size, are near  $M$ ? We report on joint work with Damaris Schindler and Rajula Srivastava addressing this question.

Our new method reveals an intriguing interplay between number theory, harmonic analysis, and homogeneous dynamics. Moreover, we discuss applications of counting rational points near manifolds such as the Dimension Growth Conjecture.