

# Gromov's conjecture on non-free isometric immersions

Mahuya Datta

The differential equation describing isometric immersions of a Riemannian manifold  $M$  of dimension  $n$  into the Euclidean space  $\mathbb{R}^q$  is an undetermined system in the range  $q > n(n+1)/2$ . By a celebrated result of John Nash, the associated differential operator  $\mathcal{D}$  is infinitesimally invertible on the space of free immersions provided  $q \geq n + n(n+1)/2$ . Gromov conjectured that the operator is possibly infinitesimally invertible on generic set of maps for  $q \geq n(n+1)/2 + n - \sqrt{n/2}$ , We shall outline the idea of Gromov and mention some recent progress made in that direction.