1125-35-2737 **Ashok Aryal*** (`aaryal@ksu.edu`), Department of Mathematics, 138 Cardwell Hall, Kansas State University, Manhattan, KS 66506. *Geometry of underlying set in Mean Value Theorem for general divergence form elliptic operators.*

In his Fermi Lectures, Caffarelli gave an alternative proof of the mean value theorem(MVT) for the Laplacian where the functions do not need twice differentiability . In the same lecture he mentioned that one can also extend it to cover the case of general divergence form elliptic operators. Ivan Blank and Zheng Hao proved the MVT for general divergence form elliptic operators over a set which is comparable to balls. The topology and geometry of such sets, which we will call hereafter "the mean value balls", are mostly unknown. I will discuss some recent results that we (me and my adviser Ivan Blank) have proved on the geometry of the mean value balls and some related problems. (Received September 20, 2016)