A MEAN VALUE THEOREM FOR METRIC SPACES

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Abstract. We present a form of the Mean Value Theorem (MVT) for a continuous function f between metric spaces, connecting it with the possibility to choose the $\varepsilon \longmapsto \delta(\varepsilon)$ relationship of f in a homeomorphic way. We also compare our formulation of the MVT with the classic one when the metric spaces are actually Banach spaces. As a consequence, we derive a version of the Mean Value Property for measure spaces that also possesses a compatible metric structure. This is a joint work with professor Paulo Carvalho Neto, from UNICAMP.