A FIXED POINT THEOREM FOR MAPPING WITH
CONTRACTING ORBITAL DIAMETERS

Vasile BERINDE

The well known contraction mapping principle has been extended in many directions until now. One of most interesting of them consists in taking a generalized contraction condition

$$d(Tx, Ty) \leq amax\{d(x,y), d(x, Tx), d(y, Ty), d(x, Ty), d(y, Tx)\},$$

instead the classical contraction condition

$$d(Tx, Ty) \leq a \cdot d(x, y),$$

for a mapping $T : X \to X$, considered on a metric space (X, d), see [9]-[11], [12], [13], [14], [16] and especially [15].

The aim of this paper is to show that all these results can be reunied in a single one, using concepts as comparison function and generalized φ-contraction.