The Radius of Metric Subregularity

We consider a set-valued mapping which is metrically subregular at a given point of its graph. The radius of metric subregularity is then defined as the smallest single-valued perturbation such that the property of metric subregularity is not retained. Contrary to its siblings (strong) metric regularity and strong metric subregularity, the property of metric regularity is in general not stable and therefore the radius can possibly be zero. On the other hand, there are mappings which are subregular but neither regular nor strongly subregular, and the radius is strictly positive. In this talk we present sharp lower and upper bounds for the radius for various classes of perturbation mappings in the infinite dimensional case. The talk is based on joint work with A. Kruger.