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Fixed point results for multivalued G-contractions

We consider multivalued maps defined on a complete metric space endowed with a directed graph. We present fixed point results for maps, called weak G-contractions, which send connected points into connected points and only contract the length of paths. We compare the fixed point sets obtained by Picard iterations from different starting points. The homotopical invariance property of having a fixed point for a family of weak G-contractions will be also presented.