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MAPPINGS PRESERVING LEFT AND RIGHT ROUGH K-CAUCHY SEQUENCES IN QUASI-METRIC SPACES

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Abstract. This study explores the notion of rough convergence of sequences within arbitrary quasi-metric spaces, distinguishing it from the classical framework of metric spaces. The concepts of right (left) rough convergence and right (left) rough K-Cauchy sequences are investigated, along with functions that preserve these types of convergence. Furthermore, an illustrative example is provided to demonstrate that the continuity of a function f is not necessarily ensured, even when f is both left and right rough K-Cauchy sequentially regular. To address this, it is shown that rough continuity offers a sufficient condition in place of standard continuity.