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(saito@usf.edu). *Categorical quandles and knots, II – the fundamental 2-quandle and colorings.*

A categorical quandle, called a strict 2-quandle, is a category and also is a quandle satisfying certain conditions. We propose the fundamental strict 2-quandle, topologically defined generalizing the fundamental quandle. The elements are homotopy classes of arrows in the knot complement such that the end points are on the tubular neighborhood of a given knot, and are connected to a base point by arcs. To study its structure, we propose arrow systems defined on knot diagrams, and their colorings by finite strict 2-quandles. Examples are given, and relations to Fox colorings will be discussed. (Received August 13, 2010)