Minimal numbers of colors for surface-knots and quandle cocycle invariants

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Abstract. We study the minimal number of colors used for non-trivial Fox colorings of surface-knots. A lower bound for the minimal number is given by using quandle cocycle invariants. In particular, we show that the minimal number of the 2-twist spinning of the 5_2 knot for Fox 7-colorings is six. This is a joint work with Shin Satoh (Kobe University).