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Xiao-Song Lin* (x1@math.ucr.edu), Department of Mathematics, University of California, Riverside, CA 92521. *Fingerloop braids and system of Yang-Baxter type equations*. Preliminary report.

Fingerloop braiding is a weaving technique from Medieval Europe and England. Mathematically, fingerloop braids form a subgroup of the braid group B_{2n} . This subgroup of fingerloop braids is closely related with the motion group of the unlink in \mathbb{R}^3 .

To find matrix representations of this subgroup of fingerloop braids, it suffices to find three matrices R, X, Y with $RX = YR$, such that for $P, Q \in \{R, X, Y\}$, equations of the form (1) $P_{12}Q_{23}Q_{12} = Q_{23}Q_{12}P_{23}$ and (2) $P_{12}P_{23}Q_{12} = Q_{23}P_{12}P_{23}$ are satisfied with the exception of $P \neq Y$ but $Q = Y$ in (1) and $Q \neq X$ but $P = X$ in (2). We will discuss solutions to this system of Yang-Baxter type equations. (Received September 18, 2005)