1119-16-254 **Paul Bruillard**, **Liang Chang**, **Seung-Moon Hong** and **Julia Plavnik*** (julia@math.tamu.edu), Department of Mathematics, Mailstop 3368, Texas A&M University, College Station, TX 77843, and **Eric Rowell** and **Michael Sun**. *Low-dimensional representations of the three component loop braid group.*

The loop braid group $\mathcal{LB}_n$ is the motion group of n oriented, unlinked circles in $\mathbb{R}^3$. Recently, physical and topological applications have motivated the study of representations of $\mathcal{LB}_3$.

Since the braid group $\mathcal{B}_3$ is a subgroup of $\mathcal{LB}_3$, our approach is to find out which representations of $\mathcal{B}_3$ can be extended to representations of $\mathcal{LB}_3$. We will discuss some advances in this direction, specially for low-dimensional representations. (Received February 16, 2016)