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Fusion of ^{9}Li with ^{208}Pb A.M. VINODKUMAR, W. LOVELAND, P. SPRUNGER, J. NEEWAY, L. PRISBREY, Oregon State University, M. TRINCZEK, M. DOMBSKY, P. MACHULE, D. OTTEWELL, TRIUMF, J.J. KOLATA, A. ROBERTS, T. SPENCER, University of Notre Dame, OREGON STATE UNIVERSITY COLLABORATION, TRIUMF COLLABORATION, UNIVERSITY OF NOTRE DAME COLLABORATION — The fusion of weakly bound nuclei is one of the active areas of research with radioactive beams. The main issue is whether the fusion cross section will be enhanced due to large nuclear size of the halo nuclei or breakup of the weakly bound valence nucleons will lead to decreased fusion cross section. In the case of ^{11}Li with ^{208}Pb, differences between theoretical predictions are very large. We observed large sub barrier fusion enhancement in the case of ^{9}Li with ^{70}Zn. As an extension to this study, measurements were carried out at TRIUMF using ^{9}Li beams in the energy range 25-45 MeV on ^{208}Pb. The alpha decay of the evaporation residues were detected using 16 silicon detectors placed close to the target. The study of ^{9}Li with ^{208}Li will be very important to understand the halo effect on fusion of ^{11}Li with ^{208}Pb. The experimental results will be presented along with theoretical model predictions.

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