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Alistair Savage* (alistair.savage@uottawa.ca), 585 King Edward Ave, Ottawa, Ontario K1N 6N5, Canada. *Quivers and the Euclidean group.*

The Euclidean group $E(n)$ is the group of isometries of n -dimensional space. The study of these objects, at least for $n = 2, 3$, predates even the concept of a group. In this talk we will focus on the Euclidean group $E(2)$. Even in this case, much is still unknown about the representation theory. We show that the category of representations of $E(2)$ is equivalent to the category of representations of the preprojective algebra associated to the quiver of infinite type A . We also consider the moduli space of representations of the Euclidean group along with a set of generators. We show that these moduli spaces are quiver varieties of the type considered by Nakajima. Using these identifications, one can prove various results about the representation theory of the Euclidean group. In particular, we see that it is of wild representation type but that if we impose certain restrictions on weight decompositions, we obtain only a finite number of indecomposable representations. (Received January 10, 2008)