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Siddhartha Sahi* (sahi@math.rutgers.edu) and **Alexander Dvorsky**. *An integral formula for a Euclidean Jordan algebra and its applications.*

We introduce a one-parameter integral associated with a Euclidean Jordan algebra, and we give an explicit evaluation as a power series in spherical polynomials. We use the integral to bound certain Gaussian functions on the Jordan algebra introduced by the speaker, which play a key role in the construction of small unitary representations of the Tits-Kantor-Koecher conformal group of the Jordan algebra.

This application involves only very special values of the parameter, and for those values we establish a formula for the integral as an algebraic function, which in particular implies that the Gaussian functions are square-integrable with respect to a natural measure. (Received January 24, 2022)