1163-33-1033 **Erik Koelink*** (e.koelink@math.ru.nl), **Maarten van Pruijssen** and **Pablo Román**.

Multivariable matrix valued orthogonal polynomials from representation theory.

The classical spherical functions on compact symmetric spaces form sets of orthogonal polynomials, which can be identified with subclasses of Jacobi polynomials in the so-called rank 1 case and with Heckman-Opdam polynomials with special values for the parameters for higher rank cases. We discuss a general way for obtaining matrix valued orthogonal polynomials related to compact symmetric spaces under some specific conditions. For the group case corresponding to $SU(n)$, we make this explicit. In this way we find matrix valued polynomial analogs of Koornwinder's 2-variable polynomials orthogonal on the interior of Steiner's hypocycloid corresponding to $n = 3$. (Received September 14, 2020)