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F. Alberto grunbaum* (grunbaum@math.berkeley.edu), Math Dept, UC Berkeley, Berkeley, CA 94720. *Matrix valued orthogonal polynomials satisfying differential equations*. Preliminary report.

Given a family of matrix valued orthogonal polynomials that are common eigenfunctions of one differential operator (with matrix coefficients) I consider the algebra of all such differential operators. This leads to many open problems in several fields. I will discuss a few examples. This is the result of a joint effort involving a few people: M. Castro, M. Dominguez, A. Duran, P. Iliev, I. Pacharoni, J. Tirao and myself. (Received August 15, 2005)