## Algebras of matrix differential operators

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Given a weight matrix W(x) on the real line one constructs a sequence of matrix valued orthogonal polynomials  $P_n$ . We study the algebra D(W)of all differential operators D with matrix coefficients such that each  $P_n$  is an eigenfunction of D with a matrix eigenvalue. Some motivation and a first example of a one parameter family of such algebras will be given.