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George Labahn* (glabahn@uwaterloo.ca), Cheriton School of Computer Science, University of Waterloo, Waterloo, On N2L 2T6, Canada. *Popov Forms of Matrices of Differential Polynomials*. Preliminary report.

Popov normal forms were introduced by V. Popov for matrices of polynomials in the middle 1960s as an alternative to the better known Hermite normal form. They were found to have better properties for use in the context of linear control theory. In this talk we will discuss Popov normal forms for matrices of differential operators. We show their usefulness in the context of systems of linear differential equations and discuss the various computational challenges in computing the forms for arbitrary matrices of differential operators. (Received February 02, 2009)