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**Carlos E. Arreche\*** ([cearrech@math.ncsu.edu](mailto:cearrech@math.ncsu.edu)). *Differential square-zero extensions and Picard-Vessiot theory*. Preliminary report.

In algebraic geometry, understanding square-zero extensions of commutative rings is the first step in the cohomological classification of infinitesimal deformations of schemes. Following recent work of Magid in the case of one derivation, we have developed analogous results for differential square-zero extensions of simple differential rings with several commuting derivations. We prove that such extensions become differentially split in a Picard-Vessiot extension. This is joint work with Raymond Hoobler. (Received March 20, 2017)