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**Jason P Bell\*** ([jpb@math.sfu.ca](mailto:jpb@math.sfu.ca)), Department of Mathematics, Simon Fraser University, Burnaby, B.C. V5A 1S6, Canada. *Some recent developments in quadratic growth.*

We look at algebras of GK dimension 2 and give some recent results. First, we show that a simple domain of quadratic growth is noetherian. Next, we look at the prime spectra and the extended centres of such algebras. A result of Smith and Zhang shows that the extended centre of a prime domain  $A$  of quadratic growth is an algebraic extension of the base field if  $A$  does not satisfy a polynomial identity; surprisingly, we show that the extended centre can have infinite transcendence degree if  $A$  is simply a prime algebra of quadratic growth. Finally, we look at the prime spectra of algebras of quadratic growth and give some conditions under which the degrees of the matrix images are bounded. The last two results are joint with Agata Smoktunowicz. (Received September 15, 2007)