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Kenneth H Chan* (kenhchan@math.washington.edu), University of Washington, Department of Mathematics, Box 354350, Seattle, WA 98195-4350. *Singularities arising as Hopf algebra actions*. Preliminary report.

We study invariant rings arising from finite dimensional Hopf algebras acting on AS-regular k -algebras. One of our goals is to investigate the analogue of the McKay correspondence in this context. We concentrate on the case of finite dimensional Hopf algebras acting "inner faithfully" on AS-regular k -algebras of global dimension 2. In this talk, we will present some examples and make some tentative conjectures.

This is joint work with E. Kirkman, C. Walton, and J. Zhang. (Received December 13, 2011)