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Dag Madsen* (dmadsen@syr.edu). *Orbit closures in varieties parametrizing the objects in the derived category.* Preliminary report.

A famous theorem by Zwara and Riedtmann gives an algebraic characterization of orbit closure (degeneration) in module varieties. In joint work with Jensen and Su we have proved an analogous theorem for varieties of A_∞ -modules. Our result should be seen as the derived category version of the Zwara-Riedtmann Theorem, and contains that theorem as a special case. In this talk I will describe the varieties and orbit closures involved and show how they gives us new insight into the derived category of a finite dimensional algebra. I will also explain why new techniques might be needed for obtaining a characterization of orbit closures in varieties of algebras. (Received September 15, 2009)