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Homological dimensions of subalgebras

This is joint work with Colin Ingalls. Let A be a finite dimensional algebra over an algebraically closed field. Fix e a primitive idempotent of A and let Γ be the subalgebra $(1-e)A(1-e)$. Finally, let S be the simple A -module at e . In this talk, we study the relationship between $\text{gl.dim.}A$, $\text{gl.dim.}\Gamma$ and the higher self-extensions of S . We will present a conjecture that relates all these concepts.