On the structure of short, grade-four, Artinian Goresntein algebras
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We study graded Artinian Gorentein (AG) algebras of embedding dimension four and socle degree three, defined as quotients of the polynomial ring ${\mathsf{k}[x,y,z,w]}$ by a homogeneous ideal I, when I is not a quadratic ideal, which, in this case, means that I needs more than six generators.

In a joint work with Oana Veliche and Jerzy Weyman, we explore the cases when the minimum number of generators for I is seven or nine, and describe its structure using the doubling construction.