

## Computing singularities of the spectra of representation rings of finite groups

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**Abstract.** Let  $G$  be a finite group of order  $n$ , and  $\xi$  an  $n$ -th primitive root of unity. Consider the affine scheme  $C := \text{Spec}(\mathbb{Z}[\xi] \otimes_{\mathbb{Z}} R(G))$ , where  $R(G)$  is the representation ring of  $G$ . We study the fibers of the formal tangent sheaf of  $C$  by computing their dimension and also finding (and measuring) the singularities of  $C$ . We present explicit computations for noncommutative groups of small order, and develop practical methods to compute these invariants for an arbitrary finite group.

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*Mathematics Subject Classification:* 20C15, 20C40, 14B05, 14H20, 14H40.

*Key words and phrases:* representation rings, Green rings, singularities, embedding dimension, Zariski tangent space.