Representations with finitely many orbits and free resolutions

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The representations of reductive groups with finitely many orbits are parametrized by graded simple Lie algebras. For the exceptional Lie algebras, Kraskiewicz and Weyman exhibit the expected minimal free resolutions for the coordi- nate ring of the normalization of the orbit closures.

I will present an inter- active method to verify their conjectures using the software Macaulay2, and construct explicitly the free resolutions of the coordinate rings and related modules.