

# Differential operators in positive characteristic and modular representations

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## **Abstract**

(With Roman Bezrukavnikov and Dmitriy Rumynin.)

The ring of differential operators (without divided powers) is an Azumaya algebra if the characteristic of the field is not zero. This leads to a translation of an algebraic problem of listing irreducible representations of a semisimple Lie algebra over a field of positive characteristic, into a geometric problem of the study of coherent sheaves on the Springer subvarieties of the flag variety.