Gelfand-Kirillov conjecture for W-algebras

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Around 50 years ago I. Gelfand and A. Kirillov conjectured that field $D(g)$ is isomorphic to $D_n(Z)$ for any algebraic Lie algebra $g$, where $Z$ is the center of $D(g)$ and $D_n(Z)$ is the skew field of ring of differential operators over $Z$ in $n$ variables. They are able to prove this fact if $g$ is solvable or $sl(n)$.

Recently A. Premet was able prove that if $g$ is simple and is not isomorphic to $sl(n)$ or $sp(2n)$ then $D(g)$ is not isomorphic to $D_n(Z)$ for any $n$. In my talk I will discuss some ideas of his proof and show how this result implies a similar (negative) statement for W-algebras attached to the minimal nilpotent orbits in simple Lie algebras.