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Nikita A. Karpenko*, karpenko@ualberta.ca, Canada. *Chow filtration on representation rings of algebraic groups.*

We introduce and study a filtration on the representation ring $R(G)$ of an affine algebraic group G over a field. This filtration, which we call *Chow filtration*, is an analogue of the coniveau filtration on the Grothendieck ring of a smooth variety. We compare it with the other known filtrations on $R(G)$ and show that all three define on $R(G)$ the same topology. For any $n \geq 1$, we compute the Chow filtration on $R(G)$ for the special orthogonal group $G := O^+(2n + 1)$. In particular, we show that the graded group associated with the filtration is torsion-free. On the other hand, the Chow ring of the classifying space of G over any field of characteristic $\neq 2$ is known to contain non-zero torsion elements. As a consequence, any sufficiently good approximation of the classifying space yields an example of a smooth quasi-projective variety X such that its Chow ring is generated by Chern classes and at the same time contains non-zero elements vanishing under the canonical homomorphism onto the graded ring associated with the coniveau filtration on the Grothendieck ring of X . (Received November 04, 2018)