

**Popescu, Călin**

**On  $UHL$  and  $HUL$ .** (English) [Zbl 1073.17502](#)

Bull. Belg. Math. Soc. - Simon Stevin 6, No. 2, 219-235 (1999).

Summary: Let  $R$  be a principal ideal domain of characteristic zero, containing  $1/2$ , and let  $\rho = \rho(R) < \infty$  be the least non-invertible prime in  $R$ . Our main result is the following: Let  $(L, d)$  be a connected differential non-negatively graded Lie algebra over  $R$  whose underlying module is  $R$ -free of finite type. If  $\text{ad}^{\rho-1}(x)(dx) = 0$ , for homogeneous  $x$  in  $L_{\text{even}}$ , then the natural morphism  $UFHL \rightarrow FHUL$  is an isomorphism of graded Hopf algebras; as usual,  $F$  stands for free part,  $H$  for homology, and  $U$  for universal enveloping algebra.

Related facts and examples are also considered.

**MSC:**

**17B35** Universal enveloping (super)algebras

**16S30** Universal enveloping algebras of Lie algebras

**16W30** Hopf algebras (associative rings and algebras) (MSC2000)