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## Homogeneous locally nilpotent derivations and embeddings of affine spaces

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Let  $m$  and  $n$  be positive integers such that  $n \geq m$  and let  $B$  be a polynomial ring in  $m + n + 1$  variables over a field  $k$  of characteristic 0. We give a bijective correspondence between the equivalence classes of embeddings  $\mathbf{A}^m \rightarrow \mathbf{A}^n$  and the equivalence classes of sequences of mutually commuting locally nilpotent derivations  $\delta_i$  ( $1 \leq i \leq m$ ) on  $B$  in some form, which are homogeneous with respect to a  $\mathbf{Z}$ -grading on  $B$  and have slices. The intersection  $A$  of the kernels of  $\delta_i$  for  $1 \leq i \leq m$  inherits the  $\mathbf{Z}$ -grading on  $B$ . We show that  $A$  is a polynomial ring with homogeneous coordinates if and only if the corresponding embedding is rectifiable.