Meeting: 1003, Atlanta, Georgia, AMS CP 1, AMS Contributed Paper Session

1003-18-647 **Alina Iacob*** (iacob@ms.uky.edu), Alina Iacob, Department of Mathematics, University of Kentucky, Lexington, KY 40506. *Products of DG-injective complexes.*

We consider a left noetherian ring R. We give a necessary and sufficient condition in order that a complex of R-modules be DG-injective. Using this result we prove that if $(K_i)_{i\in I}$ is a family of DG-injective complexes of left R-modules and K is the $\aleph_1$-product of $(K_i)_{i\in I}$ (i.e. $K \subset \Pi_{i\in I}K_i$ is such that for each n, $K^n \subset \Pi_{i\in I}K_i^n$ consists of all $(x_i)_{i\in I}$ such that $\{i|\ x_i \neq 0\}$ is at most countable) then K is DG-injective.

We also consider the $\aleph_0$-product of a family of DG-injective complexes i.e. the direct sum. We give a necessary condition in order that every direct sum of DG-injective complexes over a left noetherian ring be DG-injective. We use this result to prove that if R is a commutative local artinian ring then every direct sum of DG-injective complexes is DG-injective if and only if gl.dim $R < \infty$. We show that the result holds for any commutative artinian ring. (Received September 25, 2004)