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**Yuji Yoshino\***, Okayama University, Japan, and **Saeed Nasseh** and **Maiko Ono**. *Naïve lifting theory for dg modules.*

Let  $A$  be a strongly commutative and non-negatively graded dg algebra, and let  $X_1, \dots, X_n$  be a finite number of variables of positive degrees. We consider the following two cases: (a)  $B = A[X_1, \dots, X_n]$  is a polynomial extension of  $A$ ; or (b)  $A$  is a divided power dg algebra and  $B = A\langle X_1, \dots, X_n \rangle$  is a free extension of  $A$ .

In either case, we can prove that if  $N$  is a bounded below semifree dg  $B$ -module with  $\text{Ext}_B^i(N, N) = 0$  for all  $i > 0$ , then  $N$  is a direct summand of a dg  $B$ -module that is liftable to  $A$ .

To prove this result we shall introduce the notion of naïve liftings of dg modules, and we require some new ideas using homotopy limits. In my talk I will explain how we can prove it. This is joint work with Saeed Nasseh and Maiko Ono. (Received January 14, 2021)