LECTURE 3: DEFORMATIONS PROBLEMS AND DG LIE ALGEBRAS

1. A introduction to dg Lie algebras

2. Deformation problems from dg Lie algebras

Definition 2.1. Let $\mathfrak{g}$ be a dg Lie algebra over k. Define the pre-deformation functor $B\mathfrak{g}$ by

$$\begin{array}{rccc} B\mathfrak{g}: & \mathsf{Art}_{\mathsf{k}} & \to & \mathsf{Set} \\ & A & \mapsto & \mathrm{MC}(\mathfrak{g}\otimes\mathfrak{m}_A)/\exp(\mathfrak{g}^0). \end{array}$$

Proposition 2.2. *The pre-deformation functor $B\mathfrak{g}$ is a deformation functor.*