For the talk on Lie Algebra cohomology, please recall the following definitions and theorems

- Lie Algebras/$\mathfrak{g}$-modules/Universal envoloping algebras of a lie algebra $\mathfrak{g}$.

- Poincaré -Birkhoff-Witt Theorem (PBW theorem)

- De Rham Cohomology/ exterior derivatives/ p-forms on a smooth manifold.