Abstract

The representation theory for the Lie algebra of divergence zero vector fields plays a key role in the study of classification of irreducible integrable representations for the nullity two extended affine Lie algebras. In this talk, we first recall the notion of the extended affine Lie algebra, and review certain representation results for the infinite dimensional Lie algebras such as the Virasoro-like algebra, higher rank Virasoro Lie algebras. Finally, we present the classification of Harish-Chandra modules for the Lie algebra of divergence zero vector fields.