



首都师范大学数学科学学院
School of Mathematical Sciences Capital Normal University

学术报告
LECTURE

代数与表示论学术报告

题目: **Tau-tilting theory via morphism category**

报告人: **Dr. Rasool Hafezi**

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时间: **2026年5月14日(周四) 10:00 -11:00**

地址: **首都师大教学4楼214室**

摘要: For an additive category C , we consider a natural functor from the morphism category $H(C)$ to $\text{mod-}C$, the category of finitely presented contravariant additive functors on C . Equipping $H(C)$ with a component-wise split exact structure allows us to develop Auslander-Reiten theory and relate it via this functor to the Auslander-Reiten theory in $\text{mod-}C$. We apply this to $C = \text{mod-}A$, $C = \text{Gprj-}A$, and $C = \text{proj-}A$, obtaining insights into stable Cohen-Macaulay Auslander algebras, (stable) Auslander algebras, and preprojective algebras. In my talk, I will particularly focus on the case $C = \text{proj-}A$, where we observe how τ -tilting theory naturally arises from the tilting theory of the morphism category of projective modules. As application, I then establish a bijection between τ -rigid modules in $\text{mod-}A$ and rICE -closed subcategories of $\text{mod-}A$ that possess an Ext-progenerator. This is a generalization of a bijection given by Enomoto for hereditary algebras.

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