

Higher dimensional Auslander-Reiten theory

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In Osamu Iyama's higher dimensional Auslander-Reiten theory one studies algebras whose module categories have subcategories with suitable homological properties. In these subcategories we find analogues of fundamental concepts from Auslander-Reiten theory such as almost split sequences and the Auslander-Reiten translation.

In my talk I will give a brief introduction to this theory and focus on the most basic class of algebras to which it applies, namely d -representation finite algebras. These are certain algebras of global dimension at most d that are analogous to representation finite hereditary algebras. I will present several ways of constructing d -representation finite algebras and include many examples.