



Rings & Wings

math.uccs.edu/algebra-seminar

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Title: Injective Envelopes of Simple Left Ideals Over Leavitt Path Algebras

Abstract: For every ring R and R -module M , there exists an injective R -module $E(M)$, called the *injective envelope* of M , that contains M as a submodule in a very tight way. In this talk I'll define what an injective module is, and give a brief explanation of why an injective envelope exists for each R -module. While existence of an injective envelope is guaranteed, an explicit description of $E(M)$ is often difficult to come by.

However, in the specific case where $M = L_K(E)w$ is a left ideal of a Leavitt path algebra $L_K(E)$ generated by a sink w of E , we are able to give such an explicit description of $E(M)$. The notion of a formal power series is used. (This is joint work with Francesca Mantese and Alberto Tonolo.)

I'll conclude the talk by presenting some very recent results of Boris Bilich and Adam dor-On that are directly related to the UCCS Algebra Seminar talk I gave in 2024.