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Irreducible representations of free algebras through Leavitt Path Algebras

Let K be a field and E be the graph with a vertex v and n loops $\alpha_1 \cdots \alpha_n$. The associated Leavitt path algebra $L_K(E)$ is a perfect left localization of the free algebra in n variables $\Lambda = K < x_1, \cdots, x_n >$, and the category of finitely presented simple $L_K(E)$- modules is a quotient category of the finitely presented simple modules over Λ. Applying methods and techniques for the study of simple modules over Leavitt path algebras, we obtain a better understanding of the finitely presented irreducible representation of Λ, and a characterization of its finitely generated maximal ideals.