# Generalized Heller Functor On Module Categories

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Ahmed A. Khammash
Department of Mathematics, Umm Al-Qura University,
P.O.Box 7296, Makkah , Saudi Arabia
e-mail : khamm@uqu.edu.sa

## *Abstract*

The notion of *I*-sequences in the category of modules $ModA$ over an algebra $A$ is introduced and used to recover many well-known results and properties of almost split ( Auslander-Reiten ) sequences and relative projective covers for group algebra modules .This provides a ( generalized Heller ) functor $\Omega_I$ between certain subcategories of the category $ModA$ generalizing the well-known Heller operator in the representation theory of finite dimensional algebras. In this paper we study the properties of this functor such as exactness , its effect on irreducible maps, connection with the Green correspondence and some other cohomological connections.