

## Baer Module Hulls of Modules

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Recall that a right  $R$ -module  $M$  is called a Baer module if  $\ell_S(N) = Se$  with  $e^2 = e \in S$  for all  $N \leq M$ , where  $\ell_S(N) = \text{End}(M_R)$ . For a module  $V$ , we fix an injective hull  $E(V)$  of  $V$ . The smallest Baer module  $\mathbf{B}(V)$  such that  $V \leq \mathbf{B}(V) \leq E(V)$  (if it exists) is called the Baer hull of  $V$ .

By Rizvi and Roman (see S. Tariq Rizvi and Cosmin S. Roman, Baer and quasi-Baer modules, *Comm. Algebra* 32 (2004), 103–123), a finitely generated  $\mathbb{Z}$ -module  $V$  is Baer if and only if  $V$  is semisimple or torsion-free. Thus for a prime integer  $p$  the  $\mathbb{Z}$ -module  $\mathbb{Z}_p \oplus \mathbb{Z}$  is not a Baer module. Motivated by this result and example, in this talk, we discuss the existence and the explicit description of Baer hulls of certain modules over a Dedekind domain.