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**Harm Derksen\*** (hderksen@umich.edu), 530 Church Street, Ann Arbor, MI 48103, and **Jerzy Weyman** and **Andrei Zelevinsky**. *Quivers with Potentials: the E-invariant*.

Quivers with Potentials (or QP) can be used to prove results for cluster algebras with coefficients. QP's and their representations can be mutated at any given vertex of the quiver. For a QP-representation  $M$  we will define a number  $E(M)$  which is invariant under mutation. This E-invariant plays an important role in the proofs of various conjectures for cluster algebras. (Received September 14, 2009)