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Tai Ha* (tha@tulane.edu), **Sankhaneel Bisui** and **Abu Thomas**. *Fiber invariants of projective morphisms and regularity of powers of ideals.*

We introduce an invariant, associated to a coherent sheaf over a projective morphism of schemes, which controls when sheaf cohomology can be passed through the given morphism. We then use this invariant to estimate the stability indexes of the regularity and a^* -invariant of powers of homogeneous ideals. (Received January 12, 2021)