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Izuru Mori and **Adam Nyman*** (adam.nyman@wwu.edu). *An abstract characterization of noncommutative projective spaces.* Preliminary report.

Let k denote a base field and let \mathbf{C} denote a k -linear abelian category. I. Mori and K. Ueyama give a homological characterization for \mathbf{C} to be a noncommutative projective space, i.e. a category of the form $\text{cohproj}A$ where A is an AS-regular right coherent \mathbb{Z} -graded algebra over k . We describe a \mathbb{Z} -algebra generalization of this result that is broad enough to encompass the noncommutative deformations of $\mathbb{P}^1 \times \mathbb{P}^1$ discovered by M. Van den Bergh. We apply our result to prove that various noncommutative smooth quadrics are noncommutative deformations of $\mathbb{P}^1 \times \mathbb{P}^1$. (Received August 21, 2020)