A remark on the Hochschild-Kostant-Rosenberg theorem in characteristic p

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Abstract. We prove a Hochschild-Kostant-Rosenberg decomposition theorem for smoothly compactifiable smooth schemes X in characteristic p when $\dim X \leq p$. The best known previous result of this kind, due to Yekutieli, required $\dim X < p$. Yekutieli's result follows from the observation that the denominators appearing in the classical proof of HKR do not divide p when $\dim X < p$. Our extension to $\dim X = p$ requires a homological fact: the Hochschild homology of a smooth proper scheme is self-dual.