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**Mark T Batell\*** (mbatell@outlook.com). *Polynomial rings with half-factorial coefficients*. Preliminary report.

Let  $x$  be an indeterminate. A celebrated theorem of Gauss can be stated as follows: If  $R$  is a factorial domain, then the polynomial ring  $R[x]$  is also a factorial domain. A natural question arises: Under what conditions is the polynomial ring  $R[x]$  half-factorial? Necessary and sufficient conditions are known in the case where every  $v$ -ideal of  $R$  is  $v$ -generated by two elements. That includes the case of a Krull domain  $R$ . In this talk, we will discuss the latest developments in the general case where  $R$  is an arbitrary integral domain. (Received January 29, 2019)