

1116-VA-1697

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Let  $D_0 \subseteq D_1 \subseteq \cdots \subseteq D_n \subseteq \cdots$  be an ascending chain of commutative rings with identity. Then we define  $h(\mathcal{D}) = \{d_0 + d_1X + \cdots + d_nX^n \mid d_i \in D_i \text{ for all } i \in \mathbb{N}_0\}$  and  $H(\mathcal{D}) = \{d_0 + d_1X + \cdots + d_nX^n + \cdots \mid d_i \in D_i \text{ for all } i \in \mathbb{N}_0\}$ . In this talk, we give equivalent conditions for  $h(\mathcal{D})$  and  $H(\mathcal{D})$  to be Noetherian, to satisfy ACCP, or to be atomic. (Received September 21, 2015)