

# All $\omega$ -Automatic Integral Domains are Finite

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We investigate structural properties of  $\omega$ -automatic presentations of infinite structures in order to sharpen our methods to determine whether a given structure is  $\omega$ -automatic. We apply these methods to characterize the class of all  $\omega$ -automatic integral domain  $\omega$ -automatic. It turns out that an integral domain is  $\omega$ -automatic if and only if it is finite. Therefore the class of all  $\omega$ -automatic integral domains coincides with the class all automatic ones.