

In this paper, some necessary and sufficient conditions are given for maps in Hausdorff spaces to be topologically conjugate or semi-conjugate to subshifts of finite type. These results not only extend some related existing results in metric spaces to Hausdorff spaces but also relax their conditions. In addition, it is shown that the strict  $A$ -coupled-expansion for a map in a Hausdorff space is a sufficient condition for it to be semi-conjugate to the subshift  $\sigma_A$  in  $\Sigma_m^+(A)$ . Based on these results, two new criteria of chaos are established, in which the maps are shown to be chaotic either in the sense of both Devaney and Li-Yorke or in the sense of Li-Yorke.