

# Perfect set games and colorings on generalized Baire spaces

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The notion of perfectness can be generalized for the  $\kappa$ -Baire space in a number of different ways (when  $\kappa = \kappa^{<\kappa} > \omega$ ). We discuss the connections between these different generalizations and between the games underlying some of their definitions, as well as the corresponding generalizations of scatteredness, density in itself and the Cantor-Bendixson hierarchy. For example, we show that Väänänen's generalized Cantor-Bendixson theorem is equivalent to the  $\kappa$ -perfect set property, and is therefore equiconsistent with the existence of an inaccessible cardinal above  $\kappa$ . If time permits, we will mention analogues of the above results for variants of these perfect set games associated to open colorings. As an application, we present a Cantor-Bendixson theorem for independent subsets of  ${}^\kappa\kappa$  with respect to  $\mathbf{\Pi}_2^0(\kappa)$  colorings.