An uncountable analogue of Fraïssé's theorem

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Given a suitable class K of finite structures, a theorem of Fraïssé shows how to construct a special model, called the Fraïssé limit of K: the unique strongly homogeneous countable structure whose finite substructures are precisely the members of K. Some classes of finite structures do not quite satisfy the hypotheses of Fraïssé's theorem, but nearly do. For such a class K, we show that although there is no particularly special countable model corresponding to K, the Continuum Hypothesis implies there is nevertheless a special model of size c. It is the unique size-c structure with the countable extension property and the decisiveness property whose finite substructures are precisely the members of K. We will describe the construction of this generalized Fraïssé limit, and give one or two examples of familiar structures that can be realized in this way.