Finitary abstract elementary classes

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Let $\mathbf{K} = (\mathbf{K}, \preceq)$ be an abstract elementary class with the amalgamation property, the joint embedding property and with arbitrarely large models. For $\mathcal{A}, \mathcal{B} \in \mathbf{K}$, an embedding $f : \mathcal{A} \to \mathcal{B}$ is a $\mathbf{K}$-embedding if $f(\mathcal{A}) \preceq \mathcal{B}$. If $a \in \mathcal{A}$ and $b \in \mathcal{B}$ are sequences, then we say that the Galois-type of a in $\mathcal{A}$ is the same as Galois-type of b in $\mathcal{B}$, $t^g_{\mathcal{A}}(a/\emptyset) = t^g_{\mathcal{B}}(b/\emptyset)$, if there are $\mathcal{C} \in \mathbf{K}$ and $\mathbf{K}$-embeddings $f : \mathcal{A} \to \mathcal{C}$ and $g : \mathcal{B} \to \mathcal{C}$ such that $f(a) = g(b)$. We say that $\mathbf{K}$ has finite character if the following holds: If $\mathcal{A} \in \mathbf{K}$ is a substructure of $\mathcal{B} \in \mathbf{K}$ and for all finite sequences $a \in \mathcal{A}$, $t^g_{\mathcal{A}}(a/\emptyset) = t^g_{\mathcal{B}}(a/\emptyset)$, then $\mathcal{A} \preceq \mathcal{B}$.

We notice that $\mathbf{K}$ has finite character e.g. if the elementary substructure relation is an elementary substructure relation in some logic that has the property that every formulas has only finitely many free variables. Great majority of examples of abstract elementary classes (with AP and JEP) has finite character. In the talk I will look at the model theory of these finitary abstract elementry classes under the additional assumption that $LS(\mathbf{K}) = \omega$. A special emphasis is put on categoricity and the theory of independence in the ω-stable case.