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I am mainly interested in the various hierarchies of $C^{(n)}$ - cardinals, as introduced in [Bag10]. Recall that $C^{(n)}$ is the closed unbounded proper class of ordinals that are Σ_n- correct in the universe i.e. $C^{(n)} = \{\alpha : V_\alpha \prec_n V\}$, for $n \in \omega$. Now, given an elementary embedding $j : V \longrightarrow M$ (with critical point κ and M transitive) associated to any of the standard large cardinal notions, we may ask whether $j(\kappa) \in C^{(n)}$ holds (for any $n \in \omega$).

This question gives rise to the $C^{(n)}$ - version of the large cardinal notion at hand, by modifying the usual elementary embedding definition so as to require, in addition, that $j(\kappa) \in C^{(n)}$. Consequently, we get (apparently) new large cardinal hierarchies such as $C^{(n)}$ - measurables, $C^{(n)}$ - (super)strongs, $C^{(n)}$ - supercompacts etc. Various results about these hierarchies have highlighted their strong reflectional nature. Still, there are many unsolved questions even at the lowest levels e.g. regarding $C^{(1)}$ - supercompacts. I am currently working on the latter and some related issues.

[Bag10] Bagaria, J., $C^{(n)}$ - *cardinals*. Submitted.