▸ MARTHA CATALINA TORRES PACHON, *Higher stationarity on $\mathcal{P}_\kappa(A)$*.
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Given a topological space (X, τ), the derived set operator d_τ maps a set T to its set of limit points with respect to τ. Fixing an initial topology τ_0 on X, we can define a sequence of *derived topologies* $(X, \tau_0, \tau_1, \dots, \tau_\xi, \dots)$, where $\tau_\zeta \subseteq \tau_\xi$ for $\zeta < \xi$. This is achieved by declaring $d_{\tau_\xi}(T)$ to be open in $\tau_{\xi+1}$ and taking unions at limit stages.

In "*Derived Topologies on Ordinals and Stationary Reflection*", Bagaria characterised the non-isolated points in the ξ-th derived topology on ordinals as those satisfying a strong iterated form of stationary reflection, termed ξ-simultaneous reflection.

Generalisations of combinatorial properties of ordinals to $P_\kappa(A) := \{X \subseteq \kappa : |X| < \kappa\}$, where κ is an uncountable regular cardinal and $A \subseteq \kappa$, have been widely studied. In this context, we study a notion of higher stationarity on $\mathcal{P}_\kappa(A)$ and construct a sequence of topologies $\langle \tau_0, \tau_1, \dots \rangle$ on $P_\kappa(A)$, characterising the simultaneous reflection of *high-stationary* subsets of $\mathcal{P}_\kappa(A)$ in terms of elements in the base of a derived topology on $\mathcal{P}_\kappa(A)$.

Finally, we investigate on the consistency strength of n-stationarity on $\mathcal{P}_\kappa(A)$ for specific cases of κ and $A = \lambda$ a regular cardinal.

[1] M. Catalina Torres, *Higher stationarity and derived topologies on $P_\kappa(\lambda)$*, ***Israel Journal of Mathematics***, to appear.

[2] Joan Bagaria, *Derived topologies on ordinals and stationary reflection*, ***Transactions of the American Mathematical Society***, vol. 371 (2019), no. 3, pp. 1981–2002.

[3] Hiroshi Sakai, *Stationary reflection principles and two cardinal tree properties*, ***Journal of the Institute of Mathematics of Jussieu***, vol. 14 (2013).