

## Research TODOs

- Menger/Rothberger properties and games results
  - Is there a slick characterization of  $F \uparrow_{2\text{-mark}} Cov_{C,F}(X)$  for regular/general spaces?
  - Is  $F \uparrow? Cov_{C,F}(X)$  or  $F \uparrow? Cov_{C,S}(X)$  a hereditary property under closed subsets for any type of limited information? (The Menger property is; is Rothberger?)
  - Investigate Markov strategies for  $S$  in  $Cov_{C,S}(X)$  or  $P$  in  $Cov_{P,O}(X)$ .
  - $S \uparrow_{2\text{-mark}} Cov_{C,S}(X) \Leftrightarrow S \uparrow_{k\text{-mark}} Cov_{C,S}(X)$ ?
  - $S \uparrow_{2\text{-mark}} Cov_{C,S}(\omega_1^*)$  or  $S \uparrow_{2\text{-mark}} Cov_{C,S}(\omega_1^\dagger)$ ?
  - $F \uparrow_{k\text{-mark}} Fill_{C,F}^\subseteq(\kappa) \Rightarrow F \uparrow_{k\text{-mark}} Cov_{C,F}(\kappa^\dagger)$ ?
  - Would Lindelof scattered spaces have a 2-Markov strategy in the Menger game?
- Filling games
  - Show/disprove  $F \uparrow_{3\text{-tact}} Fill_{M,N}^\subseteq(J)$  implies  $F \uparrow_{3\text{-mark}} Fill_{M,N}^\subseteq(J)$ .
  - Show/disprove  $F \uparrow_{2\text{-mark}} Cov_{C,F}(\kappa^\dagger)$  implies  $F \uparrow_{2\text{-mark}} Fill_{C,F}^\subseteq(\kappa)$ .
- Search for a class of spaces where  $K \uparrow_{2\text{-tact}} LF_{K,P}(X)$  characterizes metacompact (aka implies  $K \uparrow_{\text{tact}} LF_{K,P}(X)$ )
  - Investigate the ladder space suggested by G.
  - Try zero-dimensional.
- Proximity Game
  - Question: predetermined strategy for D on abs. proximal space, does that imply predetermined strategy for O in  $con(X,H)$  for H compact.
  - Is proximal game properties preserved under perfect maps? Or, compact proximal preserved under continuous.
  - Alexandrof duplicate of unit interval: EC, not metrizable, what about Markov proximal?