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(sanjeevi@math.osu.edu). *Directed sheaf co/homology for pursuit-evasion games.*

Considered is a class of pursuit-evasion games, in which an evader tries to avoid detection. Such games can be formulated as the search for sections to the complement of a coverage region in a Euclidean space over a timeline. Prior results give homological criteria for evasion in the general case that are not necessary and sufficient. This will detail a new necessary and sufficient positive cohomological criterion for evasion in a general case. The principal tools are a cone-valued positive sheaf co/homology theory, combined with Alexander duality. We show how a cellular version of this sheaf over the time axis makes positive cohomology (and the evasion criterion) computable as a linear program. (Received September 15, 2016)