

TOPOLOGICAL AND ALGEBRAIC OBSTRUCTIONS FOR DISTAL MINIMAL GROUP ACTIONS ON CONTINUA

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Time: Fri, Sep. 4, 14:10-15:10

Tencent Meeting ID: 311 100 382

Abstract: We study the topological characters of a continuum X and the algebraic structures of a group G that forbid G from acting on X distally and minimally. Explicitly, we obtain the following results: (1) Let G be a lattice in $\mathrm{SL}(n, \mathbb{R})$ with $n \geq 3$ and S be a closed surface. Then G has no distal minimal action on S . (2) If X admits a distal minimal action by a finitely generated amenable group, then the first Čech cohomology group $\check{H}^1(X)$ with integer coefficients is nontrivial. In particular, if X is homotopically equivalent to a CW complex, then X cannot be simply connected.