Wang, Hanfeng; He, Wei; Zhang, Jing
On \((\beta, G_{\Pi})\)-unfavourable spaces. (English) Zbl 1458.54028

A. V. Arhangel’skii et al. [Math. Maced. 8, 1–19 (2010; Zbl 1349.54073)] introduced the class of \((\beta, G_{\Pi})\)-unfavorable spaces and proved that if a paratopological group is a \((\beta, G_{\Pi})\)-unfavorable topological space, then the group is topological. In this paper the authors study the properties of \((\beta, G_{\Pi})\)-unfavorable spaces. In this regard they prove that product spaces, dense \(G_{\delta}\)-subspaces, and every open subspace of a \((\beta, G_{\Pi})\)-unfavorable space are \((\beta, G_{\Pi})\)-unfavorable. Further, the authors prove that spaces with a dense \((\beta, G_{\Pi})\)-unfavorable subspace, locally \((\beta, G_{\Pi})\)-unfavorable spaces, and every space that is the union of a family of locally finite \((\beta, G_{\Pi})\)-unfavorable subspaces are \((\beta, G_{\Pi})\)-unfavorable. Finally they prove that continuous closed irreducible mappings preserve \((\beta, G_{\Pi})\)-unfavorableness in both directions.

Reviewer: Pranav Sharma (Jalandhar)

MSC:
54H11 Topological groups (topological aspects)
22A05 Structure of general topological groups
22A20 Analysis on topological semigroups
54D40 Remainders in general topology
54E35 Metric spaces, metrizability

Keywords:
\(G_{\Pi}\) game; \((\beta, G_{\Pi})\)-unfavourable; strategy; topological group

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References:

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