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«Algebraic and geometric methods
of analysis»

Book of abstracts



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LIST OF TOPICS

- Algebraic methods in geometry
- Differential geometry in the large
- Geometry and topology of differentiable manifolds
- General and algebraic topology
- Dynamical systems and their applications
- Geometric problems in mathematical analysis
- Geometric and topological methods in natural sciences
- History and methodology of teaching in mathematics

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НТБ ОНАФТ

A comparative study on dynamical properties of Fort, Fortissimo and Arens-Fort transformation groups

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By a transformation group (X, G, π) or simply (X, G) we mean a topological space X and discrete topological group G with identity e such that $\pi : X \times G$ is continuous and $xe = x$, $x(st) = (xs)t$ for all $x \in X, s, t \in G$ [2].

Now suppose Z is a topological space with $b \in Z$, and topology $\{U \subseteq Z : b \notin U \vee (Z \setminus U \text{ is finite})\}$ (resp. with topology $\{U \subseteq Z : b \notin U \vee (Z \setminus U \text{ is countable})\}$), then we say Z is a Fort space (resp. Fortissimo space) with particular point b ([1, Counterexamples 24 and 25]). Suppose $Y = \mathbb{Z}_+ \times \mathbb{Z}_+$ (where $\mathbb{Z}_+ = \{0, 1, 2, \dots\}$), consider topology τ on Y consisting of subsets U of Y such that:

- $(0, 0) \notin U$,
- there exists $N \geq 1$ such that for all $k \geq N$, $\{n \in \mathbb{Z}_+ : (k, n) \notin U\}$ is finite,

we call (Y, τ) Arens–Fort topological space [1, Counterexample 26].

Dynamical properties of Fort transformation groups has been studied in several texts, like [3]. In this text we make a comparative study on dynamical properties of Fort, Fortissimo and Arens-Fort transformation groups.

REREFENCES

- [1] Fatemah Ayatollah Zadeh Shirazi, Mohammad Ali Mahmoodi, Morvarid Raeisi. On distality of a transformation semigroup with one point compactification of a discrete space as phase space, *Iranian Journal of Science and Technology, Transaction A: Science*, Volume 40, Issue 4: 209–217, 2016.
- [2] Robert Ellis. *Lectures on topological dynamics*. W. A. Benjamin, Inc., New York, 1969.
- [3] Lynn A. Steen, J. Arthur Seebach. *Counterexamples in topology*, Holt, Rinehart and Winston, Inc., New York–Montreal, 1970.

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