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Ojars **Judrups** (Riga)

CLASSIFICATIONS OF DYNAMICAL SYSTEMS

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Let φ and ψ be continuous flows on a compact m-dimensional manifold M. Assume that $\varphi > \psi$ if there is a continuous surjective map $F: M \to M$ such that it maps orbits of φ onto orbits of ψ preserving sence.

Dynamical sistems φ and ψ are said to be becontinually equivalent if there exists relations $\varphi > \psi$ and $\psi > \varphi$ [1]. This relations of equivalence is denoted by H.

The relations of quasi-order $\varphi > \psi$ on the set of dynamical systems $S(M)$ introduces relations of order $X \succ Y$ on the factor set $S(M)/H$, where $X, Y \in S(M)/H$ if

$$(\exists \varphi)(\exists \psi)((\varphi \in X \text{ and } \psi \in Y) \text{ and } \varphi > \psi).$$

For every $X \in S(M)/H$ there exists at least on relation $\succ$ of linear ordered set $L_X \subset S(M)/H$, where X is maximal element.

It is proved the existence of minimal element X_m for every set L_X of dynamical systems on two-dimensional sphere and for every set L_X of dynamical system without singular points on two dimensional torus.

The classes $X \in S(M)/H$ and $Y \in S(M)/H$ are continual equivalent, if $\Omega_X = \Omega_Y$, where Ω_X is the set of minimal elements of X [2].

It is proved that on the sphere S^2 there are only three classes of continual equivalence systems, and that on torus T^2 the set of classes of equivalence has the cardinality of continuum.

REFERENCES

[1] О.М.ЮДРУПС. Сравнение эквивалентностей динамических систем на плоскости, Дифференциальные уравнения, 9 (1976), 1247-1255.

[2] О.М.ЮДРУПС. Континуальная эквивалентность динамических систем на сфере, Дифференциальные уравнения, 4 (1978), 753-754.