On Anosov–Weil theory and classification of dynamical systems on surfaces*

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In 1966 in Tiraspol at the Symposium on General Topology D.V. Anosov formulated the idea that a clue to the construction of effective topological invariants for dynamical systems with nontrivially recurrent motions (including foliations with nontrivially recurrent leaves) on surfaces consists in studying nonclosed curves without self-intersections that possess certain recurrent properties and in investigating the nonlocal asymptotic behavior of the lifts of these curves to the universal covering by means of the absolute (circle at infinity). Idea of using universal covering for investigation of asymptotic behavior of curves without self-intersection was firstly mentioned by A. Weil in 1931 and then in 1935 and unfortunately was soon forgotten. After 1966 the development of Weil and Anosov ideas led to the topological classification of the basic classes of flows, foliations, 2-webs, nontrivial one-dimensional basic sets, and homeomorphisms with invariant foliations on closed surfaces of constant nonpositive curvature. The field of inquiry in question was called the "Anosov–Weil Problem" or "Anosov–Weil Theory". We consider some aspects concerning Anosov–Weil Theory (see [1–5] for introduction to subject).

References

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