

MSC2010 37D15, 37D05

## **A criterion of topological conjugacy of flows with two limit cycles\***

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Two flows are called topologically equivalent if there exists a homeomorphism sending trajectories of one flow into trajectories of another one preserving directions of trajectories. In contrast with diffeomorphisms topological conjugacy of flows differs of topological equivalence: two flows are called topologically conjugate if there exists a homeomorphism sending trajectories of one flow into trajectories of another one preserving time of moving along trajectories.

Here we study flows with two hyperbolic limit cycles without singular points on torus. Two flows with two limit cycles are topologically equivalent if orientations of the pairs of cycles are either both consistence or both non-consistence. In our research we found that this property is not sufficient for topological conjugacy of such flows.

In 1978 J. Palis [1] invented continuum topologically non-conjugate systems in a neighbourhood of a system with a heteroclinic contact (moduli). We tried to find some similar moduli for our class of flows to describe a class of topological conjugacy, but we found that each such flow has infinite number of moduli. More precisely, the condition of conjugacy is coincidence of two special functions constructing by the flow.

### **References**

1. Palis J. A Differentiable Invariant of Topological Conjugacies and Moduli of Stability. *Astérisque*. 2017. Vol. 51. Pp. 335-346.

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\*The reported study was funded by RFBR according to the research project № 18-31-00022.