Optimal Morse flows on 2-manifolds with the boundary

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We consider optimal Morse flows on 2-manifolds, e.i. Morse-Smale flows without closed orbit and minimal numbers of fixed points and separatrixes. We also suppose that all fixed points belong to the boundary. It is proved that the flow be optimal if it has a single sink and a single source. We describe all possible topological structures of such flows on a 2-disk, a Mobius strip, a torus and a Klein bottle. On these surfaces, there are one, one, two and four structures, respectively.

References

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