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On the local moduli space of locally homogeneous affine connections in plane domains

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Abstract: Classification of locally homogeneous affine connections in two dimensions is a nontrivial problem. (See [5] and [7] for two different versions of the solution.) Using a basic formula by B. Opozda, [7], we prove that all locally homogeneous torsion-less affine connections defined in open domains of a 2-dimensional manifold depend essentially on at most 4 parameters (see Theorem 2.4).

Keywords: two-dimensional manifolds with affine connection, locally homogeneous connections

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