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On some problems of construction of analytic functions

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Abstract

We consider the following problems:

1. Construct a differential equation with prescribed invariants.
2. Construct diffeomorphisms tangent to the identity that are fixed points of the so-called Horn-map.
3. Associate a function analytic in two variables to the moduli of certain unfoldings of a saddle-node.

The problems will be solved by a unified method using Banach's fixed point theorem.