

**(Non)isomorphism of spaces of smooth functions
generated by arbitrary differential expressions.**

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Abstract : Though there are some complications in this story related to the name of Grothendieck, G.M.Henkin was the first who published (in 1968) a complete proof of the fact that the spaces of one time differentiable functions on the segment and the square are not linearly homeomorphic. In the talk, a brief survey of the further development of the topic will be given, as well as a description of some new results (obtained jointly with D.Maksimov) about spaces mentioned in the title.