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Alexey Ovchinnikov* (aiovchin@math.uic.edu), University of Illinois at Chicago, Department of Mathematics, Statistics, and Computer Science, Chicago, IL 60607. *Differential Tannakian categories.*

We define a differential Tannakian category and show that under a natural assumption it has a fiber functor. If in addition this category is neutral, that is, the target category for the fiber functor are finite dimensional vector spaces over the base field, then it is equivalent to the category of representations of a (pro-)linear differential algebraic group. Our treatment of the problem is via differential Hopf algebras and Deligne's fiber functor construction for the usual Tannakian categories. (Received July 22, 2008)