

In this tutorial, we will give an introductory overview of the theory of differential categories. The first half will be dedicated to (monoidal) differential categories, which provide the categorical foundations of the algebraic foundations of differentiation and the categorial semantics of differential categories. The second half will be dedicated to Cartesian differential categories, which provide the categorial foundations of differential calculus over Euclidean spaces and the categorial semantics of the differential lambda calculus. We will go over the definitions, see lots of examples and references.