

Monads and their applications

Dr. Daniel Sch  ppi's course lecture notes

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Introduction

Chapter 1

Categorical preliminaries

Definition 1.0.1 (Categories).

Definition 1.0.2 (Functors).

Definition 1.0.3 (Natural transformations).

Definition 1.0.4 (Whiskering).

Definition 1.0.5 (Horizontal and vertical composition of nat.transf.).

Definition 1.0.6 (adjunctions).

Lemma 1.0.7 (Yoneda).

Chapter 2

Monads and algebras

2.1 Monads

2.2 Algebras

2.3 Monadic functors

Chapter 3

Beck's monadicity theorem

Chapter 4

Monads in 2-category theory

Chapter 5

Monads in ∞ -category theory